



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 May 2025 only.

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Evidence level definitions

1. **Level of evidence** – Certain study designs are scientifically stronger at answering a question.

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

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

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

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Enabling healthy and safe workplaces

Health and wellbeing

Associations of occupation categories with cardiovascular diseases and all-cause mortality: An analysis of NHANES 2005-2014

Background: Evidence on the effects of occupation categories on cardiovascular disease (CVD) progression and longevity has mostly come from cross-sectional studies, which limits our understanding of the pathogenesis of CVD. This study aimed to evaluate the associations of occupation categories with CVD and all-cause mortality in the American population. **Methods:** We analyzed data from the 2005-2014 U.S. National Health and Nutrition Examination Survey (NHANES), a large-scale public health survey representative of the U.S. population, linked to mortality data obtained in 2019. To evaluate the association between occupation categories and the risks of cardiovascular disease (CVD) and all-cause mortality, we estimated Cox proportional hazard ratios (HRs) with 95% confidence intervals (CIs). **Results:** Among 11,102 participants (aged 20-85 years, 53.99% male), 132 died from CVD among the total 478 deaths during a median follow-up of 9.9 years. In multivariable-adjusted models, the occupation categories were significantly associated with CVD mortality, with the hazard ratios (HRs) and 95% confidence intervals (95% CIs) of 3.95(1.94-8.04) for construction and clean-up industry, 2.51(1.15-5.52) for sales and service industry, 2.49(1.04-5.95) for business and management, and 2.98(1.56,5.71) for others. For all-cause mortality, only construction and clean-up industry and sales and service industry were positively associated with all-cause mortality, and HRs (95% CIs) were 2.05(1.33-3.16) and 1.64(1.12-2.41). Both working hours in the previous week and the number of months worked exhibited varying degrees of dose-response relationships with CVD and all-cause mortality. **Conclusions:** Occupation categories were found to be significantly associated with the risk of CVD and all-cause mortality. Future research could incorporate different work properties into specific prevention strategies for these outcomes.

Chi et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: All-cause mortality; cardiovascular mortality; cohort study; occupation categories.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-22958-z>

Health profile of workers from different industries in Singapore

Introduction: Workplace safety and health are interrelated - a worker who is not healthy may cause safety lapses at the workplace; conversely, safety lapses could affect the health of the workers. This study was part of a larger Total Workplace Safety and Health (WSH) programme run by the Workplace Safety and Health Council, Singapore. The objectives were to obtain a baseline health profile of workers across four major industries and identify important health risks for targeted workplace interventions. **Methods:** Five service providers (SPs) were appointed to run the Total WSH programme. As part of the programme, SPs conducted an anonymous basic health survey among workers of participating companies. **Results:** The responses of 6,373 respondents from the cleaning, construction, manufacturing, and transport and storage industries were studied. The overall response rate was 62%. Key health issues identified were high rates of obesity (22%) and smoking (24%) and low prevalence of regular exercise and healthy dietary habits. Chronic disease rates were similar to population self-reported rates (hypertension 15%, high lipid 12% and diabetes mellitus 6%). The workers reported high work stress (13%). **Conclusion:** Health issues are prevalent in the workforce and may affect work and employee safety. It is increasingly important for employees' health to be considered in risk assessments and prioritised in workplace safety and health management systems and strategies. Health promotion interventions should be targeted, and multilevel and multicomponent initiatives should be integrated with pre-existing occupational safety programmes.

Chia et al. 2025.

Singapore Medical Journal, vol. 11.

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

Keywords: Employee's health; health promotion; healthy workplace.

Evidence Level: 5B

Link:

https://journals.lww.com/smj/fulltext/2025/05000/health_profile_of_workers_from_different.10.aspx

Effort-reward imbalance and problem drinking among workers: Differences in gender and the gender composition of industries and main job activities in a prospective cohort study from Sweden

Effort-reward imbalance (ERI) is a form of psychosocial work stress known to contribute to health problems among working populations. Given that men and women tend to work in different industries and job activities, the labour market remains gender segregated. This study investigated the relationships between effort, reward, ERI, overcommitment and problem drinking in a sample of the Swedish working population over time and simultaneously explored whether these relationships differ by gender and the gender composition of industries and main job activities. Data were drawn from the Swedish Longitudinal Occupational Survey of Health, collected biennially from 2010 to 2022, comprising 18 017 workers. Work stress and problem drinking were measured with the ERI questionnaire and the Cut-down-Annoyed-Guilty-Eye opener instrument, respectively. A logistic-generalised estimating equation was used to perform the analysis. The results showed that higher scores of all the components of the ERI-model are significantly associated with problem drinking ($p < 0.01$). However, these associations did not significantly differ by gender and the gender composition of industries and main job activities ($p > 0.10$). Also, overcommitment did not significantly moderate the association between ERI and problem drinking ($p > 0.10$). Our findings demonstrated that all the components of the ERI-model contribute to problem drinking in working populations and highlight the need for organisations and stakeholders to consider gender as a social structure when developing strategies and interventions aimed at improving work stress and reducing problem drinking.

Mensah et al. 2025.

Social Science and Medicine, vol. 372.

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

Keywords: Generalised estimating equations; labour market; problematic alcohol use; sex difference; work stress.

Evidence Level: 4B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S0277-9536\(25\)00240-0](https://linkinghub.elsevier.com/retrieve/pii/S0277-9536(25)00240-0)

Whole-brain gray matter volume mediates the relationship between psychological distress and job satisfaction

Individual differences in brain structure are not only seen between healthy and diseased individuals, or between young and elderly people, but also in middle-aged men and women. Previous studies have shown that the cause is related to psychological distress and stress, and that it is accompanied by a decline in performance. This suggests that among middle-aged male and female workers who consider themselves healthy, the brain may atrophy depending on the level of psychological distress, which may reduce job satisfaction. Therefore, in this study, we analyzed the relationship between brain structure and psychological variables from the analysis of brain images obtained by magnetic resonance imaging (MRI) and the results of a questionnaire survey of 80 middle-aged male and female workers who consider themselves healthy. The results showed that the gray matter of the whole brain, frontal lobe, temporal lobe, and parietal lobe mediated the relationship between psychological distress and job satisfaction. This

suggests that more workers than previously believed may have symptoms like frontotemporal dementia (FTD) due to psychological distress, reducing their job performance and job satisfaction.

Kokubun et al. 2025.

Acta Psychologica, vol. 256.

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Keywords: Distress; frontal lobe; gray matter volume; job satisfaction; parietal lobe; temporal lobe; whole brain.

Evidence Level: 5B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S0001-6918\(25\)00372-5](https://linkinghub.elsevier.com/retrieve/pii/S0001-6918(25)00372-5)

Association between headaches and lifestyle factors and physical and mental symptoms among 63,071 workers at a Japanese information technology company

Background: Headaches are common and can significantly affect working conditions. To reduce their occurrence at work, identifying factors associated with headaches is important. We aimed to investigate the association between headaches and lifestyle factors, as well as physical and mental symptoms, among workers at the Fujitsu Group, a Japanese information technology company, to identify factors contributing to workplace headaches. **Methods:** The results of a 2022 Stress Check Survey questionnaire (mandated by Japanese occupational law requirements) were evaluated concerning 63,071 Fujitsu Group workers (men, n = 50,360; [mean age \pm standard deviation, 45.6 \pm 10.7 years]; women, n = 12,711 [41.8 \pm 11.5 years]).

Results: The headache rates according to frequency category (seldom, sometimes, often, and almost always) were as follows: men, 48.8%, 34.2%, 13.9%, and 3.1%, respectively, and women, 33.6%, 39.9%, 21.0%, and 5.5%, respectively. Multiple logistic regression analysis of lifestyle factors showed that the odds ratio (OR [95% confidence interval]) for headache (sometimes, often, or almost always) was highest in the presence of "high stress levels" (men, 7.13 [6.57-7.73]; women, 8.79 [7.07-10.94]). Other lifestyle factors included "seldom exercising" (men, 1.47 [1.36-1.60]; women, 1.55 [1.27-1.89]) and "weekday sitting time > 12 h" (men, 1.35 [1.27-1.43]; women, 1.61 [1.40-1.84]). The population attributable fraction for "exercise habits," "high stress levels," and "sitting time" in men was 26.1%, 8.4%, and 5.2%, respectively, and 30.5%, 5.4%, and 4.9%, in women, respectively. Further analysis regarding physical and mental symptoms showed that the ORs for headache increased with the presence of "stiff shoulders" (men, 3.65 [3.37-3.96]; women, 5.08 [4.26-6.05]), "insomnia" (men, 2.71 [2.41-3.05]; women, 2.61 [2.00-3.41]), "eye strain" (men, 2.62 [2.40-2.86]; women, 2.31 [1.93-2.76]), "depression" (men, 2.35 [2.06-2.69]; women, 2.35 [1.76-3.14]), "back pain" (men, 1.66 [1.53-1.80]; women, 2.08 [1.75-2.40]), and "anxiety" (men, 1.32 [1.18-1.48]; women, 1.55 [1.20-2.00]). **Conclusions:** This large-scale survey among Japanese workers revealed the strength of the association between headaches and various lifestyle factors, and physical and mental symptoms. These findings could guide workplace interventions to decrease headaches among workers.

Yokoyama et al. 2025.

The Journal of Headache and Pain, vol. 26, no. 1.

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Keywords: Lifestyle factors; mental symptoms; physical symptoms; survey; workplace headaches.

Evidence Level: 4B

Link: <https://thejournalofheadacheandpain.biomedcentral.com/articles/10.1186/s10194-025-02065-5>

Economic hardship and health within sociodemographic and occupational groups: Behavioral risk factor surveillance system, United States, 2022-2023

Economic hardship can limit the ability of workers to prevent and address adverse health conditions. Using 2022 and 2023 Behavioral Risk Factor Surveillance System data, this exploratory analysis assessed economic hardship measures and self-rated health among currently employed and recently unemployed (<12 months) U.S. adults. Measures of economic hardship were 1) employment instability, 2) food insecurity, 3) housing insecurity, 4) utility insecurity, 5) lack of reliable transportation, 6) receipt of food

stamps or Supplemental Nutrition Assistance Program benefits, 7) lack of health insurance, and 8) cost as a barrier to needed medical care. Overall, 6.9% of currently or recently employed U.S. adults in 36 states and the U.S. Virgin Islands had high levels of economic hardship (reporting at least four of eight economic hardship indicators), and 12.5% reported having fair or poor health. High levels of economic hardship were more common among persons who were recently unemployed, were aged 18-49 years, were female, were Hispanic or Latino (Hispanic) or non-Hispanic Black or African American, had a high school education or less, or had a household income <\$50,000 per year than among all workers combined. Fair or poor self-rated health was most common among workers who were Hispanic or were from lower educational attainment and income categories. By occupational group, the prevalence of high levels of economic hardship was highest in farming, fishing, and forestry (18.5%); building and grounds cleaning and maintenance (18.2%); and food preparation and serving (16.0%) and was lowest in the legal occupations (1.2%). Among occupational groups, the prevalence of fair or poor health generally increased with the prevalence of high economic hardship, and almost every occupational group with a high level of economic hardship had a statistically significantly elevated prevalence of fair or poor health compared with that among all workers combined. Given associations between unmet economic needs and health, these findings can be used by policymakers to identify groups of workers with disproportionate economic hardships and develop strategies to enhance economic security and health for all workers.

Silver et al. 2025.

Morbidity and Mortality Weekly Report, vol. 74, no. 19.

User License: Open access

Keywords: Economic hardship; sociodemographic; occupational.

Evidence Level: 4B

Link: https://www.cdc.gov/mmwr/volumes/74/wr/mm7419a3.htm?s_cid=mm7419a3_w

Predicting the use of sugar and caffeine as countermeasures to sleepiness in London bus drivers

Sleepiness is a significant workplace safety hazard and prevalent in shift workers including bus drivers. Several aspects of professional driving can result in shortened sleep and increased sleepiness, which has the potential to result in workplace injuries, incidents and crashes. Caffeine is an effective sleepiness countermeasure; however, private and professional drivers also report using potentially ineffective countermeasures such as sugar. By identifying factors which predict use of specific countermeasures (e.g., sugar, caffeine), educational initiatives could be targeted towards encouraging effective use. A subset of data was analysed from a driver sleepiness survey with London bus drivers (n=1,335). Univariate and multivariate logistic regressions were conducted to determine which factors separately predicted use of sugar (n=238) or caffeine (n=238) as a sleepiness countermeasure. Being female, having higher self-reported sleep quality and waking indexes and actively doing something to stay awake were predictive of sugar use. Age, sleeping pill use and actively doing something to stay awake were the strongest predictors of caffeine. However, many predictors from the univariate analyses were the same for both sugar and caffeine. Although tailored initiatives could be developed, broader education relating to managing sleepiness should be implemented for all bus drivers to encourage effective countermeasure use.

Pilkington-Cheney et al. 2025.

Industrial Health, vol. 63, no. 3.

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Keywords: Professional drivers; road safety; shiftwork; sleep-related fatigue; sleepiness; workplace safety.

Evidence Level: 4B

Link: https://www.jstage.jst.go.jp/article/indhealth/63/3/63_2024-0138/_article

Work health and safety

Occupational cold stress and rewarming alters skin temperature thresholds for manual dexterity decrements: An exploratory study

The skin temperature thresholds at which precipitous reductions in dexterity occur in cold environments, and whether they are altered by rewarming, are not well defined. In three environmental conditions (20°C, 10°C, and 0°C air temperatures), 14 healthy adults (three females; age: 24 ± 6 years) completed five dexterity tests (Placing Test) over ~130 min of various light-to-moderate physical activities to simulate occupational work demands while minimally dressed. Brief passive rewarming (10 min in ~22°C air temperature) and a final dexterity test upon reentry to the environment was then performed. Dexterity was evaluated as the absolute (seconds) or percent change from an individual's best baseline performance. Prior to rewarming, segmented regression revealed thresholds for greater dexterity loss during progressive cold strain occurred at skin temperatures of ~22.9°C (fingers), ~24.9°C (hand), and ~22.4°C (forearm) (all $p \leq 0.002$). After rewarming, this threshold shifted upwards to ~25.7°C for the fingers ($p \leq 0.007$). The hand skin temperature threshold after rewarming was ~27.1°C (for absolute changes, $p < 0.001$), but one was not identified with percent change ($p = 0.074$). A forearm skin temperature threshold was not identified following rewarming ($p \geq 0.058$). These findings indicate that, in non-hypothermic conditions, skin temperature thresholds for dexterity loss during prolonged occupational cold stress may be modified with rewarming.

Chapman et al. 2025.

Physiological Reports, vol. 13, no. 9.

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Keywords: Cold injury; environmental; fingers; hands; work-rest.

Evidence Level: 3B

Link: <https://physoc.onlinelibrary.wiley.com/doi/10.14814/phy2.70342>

Occupational, socioeconomic factors and cancer mortality in participants of the Longitudinal Study of Adult Health (ELSA-Brazil): A multiple correspondence analysis

Objective: To investigate the joint relationships between cancer mortality, occupational factors, and socioeconomic characteristics among Brazilian civil servants. **Methods:** This is a cross-sectional study with data from 116 active workers at the baseline of the Longitudinal Study of Adult Health (ELSA-Brazil) (2008-2010), who died of malignant neoplasms over a 10-year follow-up period. Multiple Correspondence Analysis was used to graphically interpret the association between occupation, work stress, working hours, work regime, and socioeconomic factors with cancer mortality. **Results:** The association between variable categories resulted in four groups and allowed us to identify two broad, distinct profiles of workers. The first was characterized as women, aged between 50 and 72 years, working hours of up to 40 hours a week, no exposure to night work, standard work schedule, low job strain, higher education or graduate degree level of education, active work, noncarcinogenic occupations, and death from non-work-related cancer. The second profile was characterized by men, elementary school and high school levels of education, aged between 35 and 49 years, passive work, high job strain, on-call work regime, exposure to night work, carcinogenic occupations, and death from work-related cancer. **Conclusion:** Work-related cancer death was associated with worse socioeconomic conditions and occupational circumstances unfavorable to workers' health.

Bernardino et al. 2025.

Revista Brasileira de Epidemiologia, vol. 28.

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Keywords: Occupational factors; cancer mortality.

Evidence Level: 4B

Link: <https://www.scielo.br/j/rbepid/a/pp5mrVsJBnNCF5Sh8qcqh/?lang=en>

Flex-ability: A key concept to promote occupational health in everyday life beyond sick leave

Background: Sick leave and ill health due to stress are significant concerns today and negatively affect the individual, the organisations, and the community. High demands, multitasking, and inexplicit boundaries between different occupations contribute to an explanation. However, research shows that more qualitative studies are needed to better understand this issue and how to promote health in the working population. **Objective:** The study aims to explore participants' experiences of maintaining or regaining occupational health in their everyday life, including paid work, several years after sick leave. **Method:** Nine semi-structured interviews were conducted and analysed using inductive content analysis. The analysis resulted in one major theme and three categories describing the current experiences handling their everyday life and work situations. **Results:** The result showed that returning to work and maintaining occupational health after sick leave due to occupational ill health calls for "flex-ability". The term describes that individuals need to be open to change and adapt to new challenges at work and in everyday life. **Conclusion:** The findings highlight the importance of health-promotive organisations where the individual factor is more considered. Furthermore, a broader view of health-promotive work in society where work is included in everyday life, instead of divided into and outside of work, is needed.

Karlsson et al. 2025.

Work: A Journal of Prevention, Assessment and Rehabilitation, vol. 81, no. 1.

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Keywords: Everyday life; health; health promotion; occupational balance; rehabilitation; stress; work.

Evidence Level: 5B

Link: <https://pubmed.ncbi.nlm.nih.gov/39973651/>

Trends and driving factors of age-related hearing loss and severity over 30 years: A cross-sectional study

Background: Age-related hearing loss (AHL) is a modifiable risk factor for chronic disability and cognitive decline in adults over 60 years globally. Despite its preventable nature, long-term trends (1992-2021) in AHL burden and its demographic, socioeconomic, occupational noise exposures, and geographic drivers remain underexplored, limiting targeted intervention strategies. **Methods:** This observational study analyzed age-standardized prevalence and years lived with disability (YLDs) for AHL among adults aged ≥ 60 years using the Global Burden of Disease Study 2021 (1992-2021). Data were stratified by sex, age, region, and nation, with demographic decomposition to isolate population aging effects and Bayesian spatiotemporal regression to quantify modifiable drivers (e.g., occupational noise). Temporal trends were evaluated by calculating annual average percentage change (AAPC) with 95% confidence intervals (CI). **Results:** From 1992 to 2021, AHL-related prevalence and YLDs showed an upward trend globally (AAPC_{prevalence} = 0.14 [95% CI: 0.13, 0.14]; AAPC_{YLDs} = 0.17 [95% CI: 0.15, 0.20]). There was a downward trend in the YLDs of AHL from 1992 to 1995 (AAPC_{YLDs} = -0.08 [95% CI: -0.19, 0.04]). Regionally, while most regions showed an increasing trend in AHL prevalence, 1990-2019, some regions still showed a decreasing trend (AAPC_{Western sub-Saharan Africa} = -0.22 [95% CI: -0.37, -0.08]). In 2021, in the countries with middle socio-demographic index (SDI) levels, the older the population, the higher the prevalence and YLDs of AHL. Furthermore, the burden of AHL varies by age and sex and has unique temporal and spatial features. Notably, higher SDI levels correlated with reduced occupational noise-attributable burdens, while adults aged 70-74 years exhibited the highest occupational noise-driven YLDs. **Conclusion:** The global burden of AHL continues to rise, which is a growing problem for countries with medium SDI levels. Occupational noise exposure emerges as a critical modifiable risk factor, particularly in rapidly industrializing economies, highlighting the urgent need to prioritize workplace hearing protection programs and targeted noise control policies tailored to regional contexts. These interventions are especially vital for older men in low-resource settings and medically underserved countries to mitigate preventable disability and address health inequities.

Li et al. 2025.

BMC Geriatrics, vol. 25, no. 1.

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Keywords: Age-related hearing loss; burden; disability-adjusted life years; occupational noise exposure; socio-demographic index; trends.

Evidence Level: 4B

Link: <https://bmccgeriatr.biomedcentral.com/articles/10.1186/s12877-025-06066-6>

Occupational health challenges in radiography: A comprehensive systematic review and meta-analytic approach

Introduction: Radiographers play a pivotal role in healthcare but face significant occupational health challenges, including work-related musculoskeletal disorders (WRMSDs), burnout, fatigue, and sleep disturbances. These challenges, influenced by high workloads and inadequate ergonomics, compromise their well-being and job performance. This study aims to assess the prevalence of these health outcomes and evaluate the role of workplace factors in mitigating or exacerbating these issues. **Methods:** A systematic review and meta-analysis was conducted per PRISMA 2020 guidelines. Literature searches across PubMed, Scopus, Web of Science, and Embase included quantitative studies published from 2014 to 2024. Data on prevalence, outcomes, and measurement tools were extracted, and a random-effects model was used to estimate pooled prevalence. Risk of bias was assessed with the ROBINS-E tool. **Results:** From 1080 records, 14 studies met inclusion criteria. WRMSDs were reported by 85 % (95 % CI: 74-95) of radiographers, with the neck (73 %) and lower back (67 %) being the most affected regions. Burnout prevalence included emotional exhaustion at 29.8 % (95 % CI: 19.8-39.8). Chronic fatigue and sleep disturbances were strongly linked to extended shifts and poor ergonomics. Protective factors included professional recognition and workplace ergonomic interventions. **Conclusion:** Radiographers are disproportionately affected by physical and psychological health risks. Addressing these through enhanced workplace ergonomics, stress management, and workload balancing is imperative to improving their quality of life and job performance. **Implications for practice:** Implementing ergonomic training, fostering professional recognition, and reducing workloads are crucial for sustainable radiography practices. Policy reforms and workplace interventions can significantly improve radiographers' health, ensuring better job satisfaction and retention.

Shettigar et al. 2025.

Radiography, vol. 31, no. 3.

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Keywords: Burnout; fatigue; musculoskeletal disorders; quality of life; radiographers; sleep disorders.

Evidence Level: 1A

Link: [https://www.radiographyonline.com/article/S1078-8174\(25\)00099-9/fulltext](https://www.radiographyonline.com/article/S1078-8174(25)00099-9/fulltext)

Effects of a workplace participatory approach to support working caregivers in balancing work, private life and informal care: A randomized controlled trial

Objectives: Many employees combine their work with informal care responsibilities for family and friends, potentially impacting their well-being and sustained employability. This study aimed to investigate the effectiveness of a workplace participatory approach (PA) intervention in supporting working caregivers to prevent and solve problems related to balancing work, private life, and informal care tasks. **Methods:** We conducted a two-armed randomized controlled trial (ISRCTN15363783) in which working caregivers either received the PA (N=57), under guidance of an occupational professional serving as process facilitator, or usual care (N=59). We recruited 125 working caregivers from four Dutch organizations. Questionnaire-based measurements were assessed at baseline, 4, and 7 months. The primary outcome was work-life imbalance. Secondary outcomes were perceived social support from supervisors and colleagues, role overload, distress and perceived burden of combining work and informal care. Intervention effects were analyzed using intention-to-treat analysis and linear mixed models. **Results:** The PA was not effective in

reducing work-life imbalance, improving support from colleagues or reducing role overload, distress and perceived burden of combining work and informal care. However, the PA significantly improved perceived social support from supervisors at 4 months [$\beta=0.54$, 95% confidence interval (CI) 0.21-0.88] and 7 months ($\beta=0.36$, 95% CI 0.02-0.70). Interaction effects indicated that improvement in supervisor support varied depending on the organization. **Conclusion:** The PA improved supervisor support but not work-life imbalance. Further research should explore PA effects on working caregivers with and without balance issues and the role of supervisor support in reducing work-life conflict.

Vos et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Caregivers; workplace participatory approach; work; informal care.

Evidence Level: 1B

Link: <https://www.sjweh.fi/article/4208>

Educational intervention on biosafety with hospital hygiene and cleaning workers

To evaluate the effectiveness of an educational intervention with hospital cleaning and sanitizing workers in protecting against injuries caused by biological agents. This was a prospective, quasi-experimental, before-and-after study with a single group, analyzing workers' behavior regarding adherence to standard precautions. Data was collected from 106 cleaning and sanitizing workers through a demographic and occupational questionnaire and a knowledge and behavioral survey on preventing diseases caused by biological agents. Participants' behavior related to biosafety was observed before and after the educational intervention. Descriptive and inferential statistical analysis. 77.4% of the workers are female and approximately 42% have worked for up to a year. As for the level of education, 39.6% had completed high school and 29.2% had incomplete primary education. The median score for adherence to standard precautions: pre-intervention 14 points and post-intervention 17 points. Among the observations before dressing, adherence to hand hygiene with soap and water rose from 41.7% to 75.0% after the intervention. The educational intervention, based on theoretical-practical workshops and active methodologies, improved adherence to biosafety practices, as evidenced by both reported behavior and direct observation. The leadership and commitment of hospital managers are crucial for the continuity of education and biosafety practices, ensuring the safety of professionals and patients. Future studies should focus on the health of hospital cleaning and sanitizing workers, including educational programs and the relationship between their activities and patient safety against infections in healthcare services.

Vasconcelos et al. 2025.

Revista Latino-Americana de Enfermagem, vol. 33.

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Keywords: Biosafety; intervention; cleaning; hospital workers.

Evidence Level: 3B

Link: <https://www.scielo.br/j/rlae/a/v7yjhwhkCQXWbDXzw3bjL3J/?lang=en>

Risk Assessment

An innovative approach to occupational risk assessment in OHS: A case study on the verification of the ALrisk Model in manufacturing enterprises in Slovakia

The issue of occupational health and safety (OHS) is currently a pressing and essential challenge for improving production processes and workplace environments, particularly in manufacturing enterprises. With increasing demands for efficiency and workplace safety, it is crucial to implement innovative approaches that enhance accident prevention and safeguard employees' health. These approaches contribute to the long-term sustainability of enterprises and reduce costs associated with workplace injuries and occupational diseases. The core focus of this article is to present the ALrisk model for OHS risk

assessment and management, outlining its key components, as well as the results and benefits of its verification in specific job positions within manufacturing enterprises in Slovakia. The study employed scientific methods, along with risk identification, analysis, and workplace condition assessment methods, in the development and verification of the ALrisk model. These methods contributed to a more precise identification of factors endangering employees' safety and health and enabled the formulation of solutions for their mitigation. The application results indicate that the proposed model provides a more effective method for assessing occupational risks, thereby enhancing prevention-reducing health hazards for employees and improving overall workplace safety. The article offers practical insights into the application of the ALrisk model as an innovative and systematic approach within the specific conditions of manufacturing enterprises. The findings of the study serve as a valuable resource for OHS managers and senior employees seeking to improve workplace safety and accident prevention within their production processes. Moreover, the results are beneficial for other professionals engaged in OHS, particularly in the assessment and management of occupational risks, not only in Slovakia but also across European countries. **Kuricová et al. 2025.**

International Journal of Environmental Research and Public Health, vol. 22, no. 5.

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Keywords: ALrisk model; manufacturing enterprises; occupational health and safety; occupational risk assessment; risk management; workplace safety.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/22/5/757>

Chronic health issues

Burden and predictors of chronic obstructive pulmonary disease occurrence and severity among an occupational cohort of United States Department of Energy former workers

Background: Chronic Obstructive Pulmonary Disease (COPD) is a chronic inflammatory lung disease that reduces lung function and primarily affects older adults. Evidence suggests that occupational exposures like diesel exhaust, cadmium, welding fumes, and silica increase the risk of COPD. Some United States Department of Energy (DOE) workers may be exposed to these noxious substances as they execute their job responsibilities. Assessment of the burden of COPD among these workers and identification of the potential associations between the condition and the above occupational exposures is important for guiding screening, prevention, and control programs. Therefore, the objectives of this study are to: (a) estimate the burden of COPD among former workers of the DOE in the United States and (b) investigate the association between occupational exposures and COPD occurrence and severity among these workers while controlling for environmental, behavioral, and socio-demographic factors. **Methods:** Retrospective data containing health screening records of former DOE workers, covering the time period 2006-2019, were obtained from the National Supplemental Screening Program. Multivariate imputation by chained equation was used to impute missing values. Binary and multinomial logistic regression models were used to investigate predictors of COPD occurrence and severity, respectively. **Results:** Of the 17,376 participants included in the study, 20.8% had COPD. History of asthma, age at exam, body mass index, and smoking were significant predictors of both COPD occurrence and severity. Individuals exposed to silica had higher odds of COPD compared to those that were not exposed to silica. Similarly, diesel exhaust exposure was significantly associated with risk of more severe COPD. **Conclusions:** The findings of this study demonstrate the importance of considering occupational experience in the assessment of both COPD occurrence and severity. This information may be important for occupational screening programs as well as aiding in identifying modifiable risk factors to guide prevention and control efforts.

Howard et al. 2025.

PLoS One, vol. 20, no. 5.

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Keywords: Chronic obstructive pulmonary disease; burden.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0322815>

The impact of reproductive health needs on women's employment: A qualitative insight into managing endometriosis and work

Background: Reproductive health conditions present various challenges for women in all aspects of their lives, including in the workplace. This study explores the workplace experiences of employed women with reproductive healthcare needs arising predominantly from endometriosis, as well as adenomyosis and infertility. **Methods:** Semi-structured interviews were conducted with 12 women with one or more of these conditions who were employed while experiencing symptoms of their condition or seeking treatment (such as in-vitro fertilization or laparoscopic surgery). **Results:** Interviewees reported significant physical and psychological hardship because of their reproductive health conditions, namely pain associated with endometriosis. The impact of reproductive health needs and treatment on women's ability to work included: difficulty managing symptoms, additional pressure to perform, exhaustion of 'sick leave', and working less and negative impact on career progression. In terms of how workplaces can improve the wellbeing of women with endometriosis and other reproductive health needs, women would benefit from: flexibility and working from home, access to paid reproductive health leave, and improved workplace education, trust and understanding. **Conclusions:** Women's own accounts of how endometriosis and their reproductive health impacts their working lives, and what employers can do to support them, provides a platform to better understand women's needs. These findings can inform public-policy solutions and workplace policies to better meet the needs of women with endometriosis and improve their workforce participation.

Hvala et al. 2025.

BMC Women's Health, vol. 25, no. 1.

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Keywords: Reproductive health; women's needs; health; endometriosis.

Evidence Level: 5B

Link: <https://bmcwomenshealth.biomedcentral.com/articles/10.1186/s12905-025-03726-y>

Early identification of potential occupational noise-induced hearing loss: A systematic review

Objective: This systematic review addressed two questions: 1) *For which audiometric test frequencies or pure tone averages are hearing threshold levels (HTLs) most susceptible to early occupational noise induced hearing loss (NIHL) before significant damage?* 2) *Which early flag metric best detects early hearing shifts due to noise for occupational NIHL surveillance?* **Design:** Systematic searches were conducted in Ovid MEDLINE(R) and Embase from July 2021 to May 2024. Eligibility was screened by two independent reviewers using Covidence. HTL results were analysed for susceptibility to noise-induced changes, and sensitivity and specificity of early flag metrics were assessed. **Study sample:** Of 175 studies retrieved, 18 met the inclusion criteria. **Results:** Ten studies emphasised the importance of testing at frequencies above 8 kHz, with HTLs at 12, 14, and 16 kHz frequently identified as the most noise susceptible. Conventional frequencies of 3-6 kHz were also noted as susceptible. NIOSH and OSHA metrics had low sensitivity and specificity, but modifications improved their performance to 100% sensitivity and 98% specificity. **Conclusion:** The review highlights the need to refine current metrics and explore extended high frequencies for NIHL monitoring. Research is required to determine frequencies for warning metrics and sensitive metrics for early occupational NIHL detection.

Makaruse et al. 2025.

International Journal of Audiology, vol. 64, no. 5.

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Keywords: Noise-induced hearing loss; audiometry; hearing conservation; hearing screening; high frequency audiometry; noise injury; threshold shift criteria.

Evidence Level: 1A

Link: <https://pubmed.ncbi.nlm.nih.gov/39468424/>

Prevalence and impact of exploding head syndrome in a Japanese working population

Study objectives: Exploding head syndrome (EHS) is a parasomnia characterized by the perception of loud noises, or explosions inside the head during the sleep-to-wake transition. The prevalence of EHS remains unclear. This survey aimed to elucidate the prevalence of and factors associated with EHS in this cohort.

Methods: As part of the Night in Japan Home Sleep Monitoring Study (NinjaSleep study), a cross-sectional survey was conducted among government employees in Koka City, Shiga Prefecture, Japan, in 2022. Participants were queried regarding their experiences with EHS as defined in the International Classification of Sleep Disorders, 3rd Edition, including sudden loud noises or sensations of explosions, subsequent abrupt awakenings and feelings of fright. Various standardized instruments were employed to evaluate depression, anxiety, insomnia, quality of life, and fatigue. **Results:** Of the 2081 employees invited to participate, 1878 completed the survey. After excluding respondents with epilepsy and incomplete responses, 1843 participants were deemed eligible for analysis. Among them, 46 (2.49%) reported experiencing sudden noises or sensations of explosions, with 23 (1.25%) meeting the diagnostic criteria for EHS. The EHS was significantly related to the scores on the Patient Health Questionnaire-9, Generalized Anxiety Disorder-7, Athens insomnia scale, and Chalder fatigue scale, even after adjusting for age, sex, body mass index, and categorized mean sleep duration. **Conclusion:** This study elucidates the prevalence of EHS among the Japanese population and underscores its potential association with insomnia symptoms and various psychological factors.

Tsovoosed et al. 2025.

Sleep, vol. 48, no. 5.

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Keywords: Anxiety; depression; exploding head syndrome; insomnia; parasomnias; quality of life assessment.

Evidence Level: 4B

Link: <https://academic.oup.com/sleep/article/48/5/zsaf007/7951333?login=false>

Occupational exposure

Worker risk from ultrasonicator aerosolization in medical device reprocessing: A particulate and bio-burden approach

Background: Reprocessing reusable medical devices and surgical instruments is vital for ensuring safe health care in hospitals. Medical device reprocessing departments (MDRDs) handle the cleaning, disinfection and sterilization of these instruments. While previous research has examined bioburden on surfaces and associated patient health risks, there is limited focus on occupational hazards for MDRD workers.

Aim: To investigate the potential bioaerosol exposure and particle concentrations generated by ultrasonic sterilizing water baths within the MDRD at Mount Sinai Hospital, Toronto, Canada. **Methods:** Bioaerosol sampling was conducted using Andersen-style samplers for bacterial and fungal cultures.

Particle sampling was measured using optical particle samplers. **Results:** The majority of bioaerosols were composed of low-risk skin microflora and waterborne bacteria, predominantly *Micrococcus luteus* and *Staphylococcus* spp. However, potentially harmful bacteria such as *Citrobacter* spp. and *Acinetobacter* spp. were detected. Fungal genera identified included *Aspergillus*, *Cladosporium* and *Penicillium*.

Conclusions: Although the overall aerosol generation from ultrasonic cleaning appeared minimal, this study highlights the importance of appropriate personal protective equipment, and suggests the need for further research on ventilation and additional aerosol sources in MDRDs.

Anders et al. 2025.

The Journal of Hospital Infection, vol. 159.

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Keywords: Aerosolization; air-transmitted infection; bacteria; bioaerosols; disinfection; hospital sterility; hypersonication; water and wastewater.

Evidence Level: 5B

Link: [https://www.journalofhospitalinfection.com/article/S0195-6701\(25\)00027-1/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(25)00027-1/fulltext)

Comparative analysis of dermal and inhalation exposures to antineoplastic drugs among workers in the workplaces: A systematic review

Objective: Occupational exposure to antineoplastic drugs presents significant health risks to workers, necessitating a comprehensive understanding of both dermal and inhalation exposures. This systematic review examines the relative significance of cutaneous versus inhalation exposure among professionals handling these potent medications. **Study design:** Systematic review. **Methods:** A systematic search using the PECO framework was conducted in PubMed, Scopus, and Web of Science, adhering to PRISMA guidelines. Data from surface and air sampling studies were collected and analyzed. **Results:** Ten studies met the inclusion criteria, assessing various antineoplastic drugs across different occupational settings. Surface contamination levels varied widely, with concentrations ranging from very low to high, whereas airborne monitoring consistently reported "Not Detectable" levels. Exposure levels were influenced by workplace practices, handling procedures, and the sensitivity of detection methods. **Conclusions:** This systematic review of ten studies on dermal and inhalation exposure to antineoplastic drugs in various occupational settings reveals significant variability in contamination levels. Tailored safety measures, including stringent protocols, decontamination procedures, and respiratory protection, are essential for workplace safety. The review highlights the importance of standardized safety protocols, considering the impact of workplace practices and detection method sensitivity. Additionally, it underscores the health risks associated with even low-level exposure, emphasizing the need for biological monitoring. Despite some limitations, this study offers valuable insights for enhancing the safety of staffs handling these potent drugs, guiding future research and policy development.

Beigzadeh et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Antineoplastic drugs; dermal exposure; inhalation exposure; occupational health; systematic review.

Evidence Level: 1A

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-21191-4>

Enhancing the communication of radiation exposure data for radiological workers in Korea using data visualization techniques

Effective communication of radiation exposure data is essential for improving safety management practices for radiological workers. However, traditional tabular formats used in reporting radiation exposure data often fail to convey critical patterns and trends, making it difficult for non-experts to interpret and act on the information. This study evaluates the application of data visualization techniques, including radar charts, box plots, sparklines, and Chernoff faces, to enhance the accessibility and comprehension of radiation exposure data. Using datasets from the "2022 Annual Report on Individual Exposure Doses of Radiological Workers" published by the KDCA, this study demonstrates how visualization can effectively highlight disparities across professions, demographic groups, and geographic regions. The findings underscore the significant potential of visualization methods in simplifying complex datasets, enabling stakeholders to make more informed decisions. Nonetheless, the study has limitations, including its

reliance on pre-existing public datasets and a lack of real-time or granular data. Future research should focus on collecting primary data to explore causal relationships in radiation exposure trends and on applying advanced statistical and machine learning techniques to uncover deeper insights. By integrating robust visualization methods, this study aims to bridge the gap between raw data and actionable knowledge, ultimately contributing to safer occupational environments for radiological workers.

Choi 2025.

PLoS One, vol. 20, no. 5.

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Keywords: Radiation exposure; radiological; Korea.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0323091>

A systematic review of the relation between ten potential occupational sensitizing exposures and asthma

Objective: The aim of this systematic review was to identify, evaluate, and synthesize the relation between ten potential occupational sensitizing exposure groups and asthma. **Methods:** A systematic literature search was conducted in three databases for peer-reviewed articles published between July 2011 and March 2023. Exposures included ten potential occupational sensitizing exposure groups (amines, anhydrides, biocides [eg, pesticides], crustaceans, enzymes, mammals, metals, "mold, fungi and yeast", molluscs, and other chemicals [eg, cleaning agents]) classified as having no or limited evidence of a causal relation with asthma in our previous overview of systematic reviews. We included observational and case studies. Study selection, data extraction, risk of bias assessment, and evidence level evaluation were conducted independently by two reviewers, who also upgraded or downgraded the level of evidence found in our overview. **Results:** This review included 55 articles. The overall confidence in study results was rated high in 8, moderate in 18, and low in 29 studies. No new studies were found for molluscs. For the remaining exposures, we upgraded main groups of crustaceans and enzymes to moderate evidence, mammals and metals to limited/contradictory, and amines and biocides to very limited/contradictory. For subgroups/specific exposures, pesticides, cleaning agents - such as chloramine and disinfection products - and an unspecified group of other chemicals, specifically acrylates and epoxy, were upgraded to moderate. **Conclusion:** New occupational sensitizing exposures with moderate evidence include crustaceans, enzymes, pesticides, cleaning agents such as chloramine and disinfection products, and chemicals such as acrylates and epoxy.

Dalbøge et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Occupational setting exposures; asthma.

Evidence Level: 1A

Link: <https://www.sjweh.fi/article/4214>

Industrial noise: Impacts on workers' health and performance below permissible limits

Background: This study investigates the adverse effects of industrial noise below permissible limits on hearing health, work performance, and work stress among workers in medium-sized enterprises. **Methods:** The study included two medium-sized enterprises and a total of 172 workers. A comprehensive noise assessment was conducted in both enterprises. Workplace noise levels were recorded using a Larson Davis SoundAdvisor™ Model 831C sound level meter, following ISO 1996-2:2017 standards. The enterprises were categorized as low-noise (mean: 60.55 dB(A), range: 55.6-66.7 dB(A)) and high-noise (mean: 78.22 dB(A), range: 76.5-80.1 dB(A)) groups. Participants' air conduction hearing thresholds (0.5-8 kHz) were measured using an Interacoustics AS608 audiometer. Sociodemographic data were collected, and auditory complaints were assessed through face-to-face interviews. Workers completed the Job Stress Scale, while their supervisors evaluated their performance using the Job Performance Scale. Statistical significance was set at $P < 0.05$. **Results:** Our analysis revealed elevated hearing thresholds at 2000 and 4000 Hz in both ears and

at 6000 Hz in the left ear among workers in the high-noise group. Additionally, employees exposed to higher noise levels demonstrated lower work performance ($P < 0.05$). However, no statistically significant difference was found in work stress levels between the low- and high-noise groups ($P > 0.05$). A significant positive correlation was observed between age and hearing thresholds in both groups, whereas no relationship was found between age and work stress or work performance. Furthermore, no correlation was detected between work stress and work performance. **Conclusion:** This study highlights the serious health risks associated with industrial noise, even when exposure remains below permissible limits. The findings emphasize the need for effective noise control measures to protect workers' health and performance.

Gedik Toker et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Hearing loss; occupational noise; work performance; work stress.

Evidence Level: 5B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-22732-1>

Occupational exposure to wildland firefighting and its effects on systemic DNA damage

Background: Portugal is among the European Union countries more devastated by forest fires. Wildland firefighters are at the forefront of this battle, facing exposure to a wide range of harmful pollutants. Epidemiological studies have highlighted a potential link between occupational firefighting exposure and several diseases, including cancer. To date, very few studies have explored the biological mechanisms associated with such exposure. The present longitudinal study aims to assess changes in early effect biomarkers following wildland firefighters' occupational exposure to a real wildfire event. **Methods:** Paired blood samples from 59 healthy Portuguese wildland firefighters were collected at two different time points: before wildfire season and after a fire event during wildfire season. Sociodemographic variables (e.g., age, sex) and work-related factors (e.g., years of service) were assessed via a self-reported questionnaire. Levels of early effect biomarkers, such as primary DNA damage and oxidative DNA damage (oxidised purines) were assessed via comet assay. DNA double-strand breaks (DSBs) were evaluated by phosphorylated H2AX (γ H2AX). Moreover, hydroxylated polycyclic aromatic hydrocarbon metabolites (OHPAHs) and metal(loid)s were quantified in urine samples. The influence of urinary OHPAHs, urinary metal(loid)s, and other exposure-related factors (e.g., firefighting duration) on changes (Δ) in early effect biomarkers (post-vs. baseline levels) was investigated. **Results:** Firefighting activities led to a significant increase in both primary DNA damage and oxidative DNA damage by 22 % (95 % CI: 1.11-1.35; $p < 0.05$) and 23 % (95 % CI: 1.04-1.45; $p < 0.05$), respectively. Results from linear regression revealed that per each unit increase of urinary 2-hydroxyfluorene (2-OHFlu) ($\mu\text{mol/mol}$ creatinine), the risk of Δ oxidative DNA damage increased by 20 % [FR: 1.20 (1.09-1.32); $p < 0.01$]. Additionally, each unit increase in urinary cesium (Cs) ($\mu\text{g/L}$) resulted in a significant 4 % increase in Δ primary DNA damage [FR: 1.04 (1.01-1.06); $p < 0.05$] and a 3 % increase in Δ oxidative DNA damage [FR: 1.03 (1.01-1.05); $p < 0.05$]. Post-exposure levels of γ H2AX were significantly correlated with urinary 2-OHFlu levels assessed after firefighting ($r = 0.30$; $p < 0.05$). Furthermore, exposure duration and reported breathing difficulties during firefighting were significantly associated with increased levels of primary DNA damage. **Conclusion:** Results obtained provide insights into the potential human health effects of wildland firefighting occupational exposure at the genetic and molecular levels, offering new and important mechanistic data. These findings are crucial for implementing health and safety measures, recommendations, and best practices to mitigate occupational risks and protect the health of wildland firefighters.

Esteves et al. 2025.

International Journal of Hygiene and Environmental Health, vol. 266.

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Keywords: Biomonitoring; DNA damage; firefighting; genotoxicity biomarkers; occupational exposure; wildland firefighters.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S1438463925000586?via%3Dihub>

The role of artificial intelligence in occupational health in radiation exposure: A scoping review of the literature

Introduction: Artificial intelligence (AI) has the potential to significantly enhance workplace safety and mitigate occupational radiation exposure risks by improving the accuracy of assessment and management of these hazards. This study aims to review research on the use of AI in the assessment, monitoring, control, and protection of occupational radiation exposure. **Method:** This review was conducted according to the PRISMA guidelines. A comprehensive search was performed in the Web of Science, Scopus, and PubMed databases from inception to April 2024. The search strategy was designed based on the PICO principle and included keywords related to artificial intelligence, occupational exposure, radiation, and industry. The inclusion criteria explored the application of artificial intelligence in the assessment, monitoring, control, and protection against occupational radiation exposure. The quality of the included studies was evaluated using the MMAT critical appraisal tool. **Result:** In this review, the initial literature search in the Web of Science, Scopus, and PubMed databases identified 2920 articles. After removing duplicate references, screened based on title, keywords, and abstract, Ultimately, 59 eligible articles were selected, which utilized various artificial intelligence tools, such as expert systems, machine learning, deep learning, and other applied AI models. Of all the articles, 76% had high scores and were considered strong. These studies were categorized into three groups: supervision and assessment, detection and monitoring, protection, control, and personal protective equipment. **Conclusion:** The successful application of AI can potentially improve occupational radiation exposure management, but several key challenges must be addressed. These include the need for high-quality training data, interpretability of complex AI algorithms, alignment with safety standards, integration with existing systems, and the lack of interdisciplinary expertise. Addressing these research gaps through further study and collaboration will be crucial to realizing the benefits of AI in this domain, which has long been a critical concern in human and work environments.

Fazli et al. 2025.

Environmental Health, vol. 24, no. 1.

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Keywords: Artificial intelligence; deep learning; machine learning; occupational exposure; radiation.

Evidence Level: 1A

Link: <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-025-01186-3>

Assessment of cancer biomarkers in the Grenfell firefighter cohort study

Firefighters are exposed to a diverse range of harmful substances, including polycyclic aromatic hydrocarbons, benzene, and other carcinogens. These toxic compounds induce DNA damage, often causing the formation of DNA adducts and other lesions that can contribute to the development of various diseases, including cancer. Recent advancements in molecular diagnostics have shown that circulating cell-free DNA (cfDNA) in plasma is a valuable biomarker for detecting DNA damage and disease states. In this study, we explored whether changes in the quantity and quality of plasma cfDNA might reveal DNA lesions or serve as early markers for diseases such as cancer in UK firefighters. Whilst there are few published epidemiological studies of risk of cancer in UK firefighters, there are none on molecular markers in this population. All the 685 firefighters who participated in the study were employed by the London Fire Brigade in 2017; many of them also attended the Grenfell Tower fire, the most devastating fire to occur in the UK in modern history. In this exploratory analysis, we sought to gain insights into the potential long-term health impacts of toxic smoke exposure on these first responders by analysing both the concentration

of cfDNA present and specific genetic alterations in cfDNA. Using next-generation sequencing and a panel that detects pathogenic DNA variants linked to various cancers, we analysed a subset of 261 firefighters. Our findings revealed that 11 firefighters carried pathogenic DNA variants associated with cancer, but we found no association between fire smoke exposure and the presence of these variants.

Feary et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Biomarkers; cancer; fire smoke; firefighter.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-025-95991-y>

Integrative analyses of circulating microRNA expression profile in hexavalent chromium exposed workers: A cross-sectional study within the SafeChrom project

Background: Exposure to hexavalent chromium (Cr(VI)) can occur during occupational activities and leading lung cancer. MicroRNA (miRNA) plays an important part in carcinogenesis. Whether Cr(VI) exposure causes cancer-related miRNA changes is yet uncharacterized. **Methods:** This study included 89 Cr(VI) exposed workers and 47 controls. MiRNAs were extracted from plasma followed by library preparations, miRNA sequencing, and differentially expressed miRNAs (DEMs) analysis. To understand the underlying biological functions, we used bioinformatics approaches, and qPCR was performed to validate the expression of potential target genes. **Results:** A total of 2100 miRNAs were detected. In the exposed workers, 59 DEMs were identified: 21 up-regulated and 38 down-regulated. Target genes for both up- and down-regulated DEMs were significantly enriched in: miRNAs in cancer, small cell lung cancer and non-small cell lung cancer. Protein-protein interactions showed a high number of interactions, in which CCNE2, CDK4 and E2F1 were predicted as hub genes, and the messenger RNA expression of those genes was significantly higher in the exposed workers compared with controls. **Conclusions:** Our study suggests that low-to-moderate Cr(VI) exposure results in differential expression of lung-cancer-related miRNAs and associated target genes. Further studies are needed to validate our findings and clarify whether these changes predict cancer risk.

Jiang et al. 2025.

Journal of Hazardous Materials, vol. 488.

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Keywords: Bioinformatics; expression profiles; hexavalent chromium; MicroRNA; sequencing.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0304389425002791?via%3Dihub>

Investigation of relationship between occupational exposure to aerosol and sleep problems: A systematic review and meta-analysis

There are various occupational and industrial activities that are associated with the production of suspended particles. Little is known about sleep disturbance caused by exposure to aerosol exposure. Presented systematic review and meta-analysis study aimed to investigate the impact of various aerosols during occupational exposure on sleep. A systematic search in Scopus, Web of Science, PubMed, Embase, and Medline databases was performed until 20 February 2024. Three sets of keywords and their possible combinations were used in the search algorithm. To evaluate the quality and risk of bias in studies, the Joanna Briggs Institute (JBI) tools and risk of bias in non-randomized studies of exposure (ROBINS-E) instruments were applied, respectively. The pooled values were also computed by meta-analysis. Based on inclusion/exclusion criteria, 23 articles were entered into the review. 9 out of 11 articles with high quality (81.82 percent), 8 out of 9 articles with moderate quality (88.89 percent), and 2 out of 3 articles with low quality (66.67 percent) indicated that aerosol exposure had a meaningful negative effect on sleep among workers in various occupations. Among articles, 69.6% (N = 16) were given a high risk of bias rating, 13.0% (N = 3) were rated as moderate risk of bias, and 17.4% (N = 4) were rated as low risk of bias. The results of

the meta-analysis indicated that the pooled value of the prevalence in the cross-sectional, cohort, and case control studies was 42.35 (95%CI [34.55, 50.16]), 10.82 (95%CI [6.76, 14.87]), and 35.70 (95%CI [13.96, 57.45]), respectively. Also, the results of the meta-analysis showed that the pooled values of the odds ratio in the cross-sectional and cohort studies were 1.82 (95% CI [1.43, 2.21]) and 1.73 (95% CI [1.49, 1.96]), respectively. Totally, most studies indicated that various sources of occupational aerosol exposure significantly affected sleep among employees.

Khoshakhlagh et al. 2025.

PLoS One, vol. 20, no. 5.

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Keywords: Sleep; aerosol; sleep problems; occupational exposure.

Evidence Level: 1A

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0321515>

Differences in serum concentrations of per-and polyfluoroalkyl substances by occupation among firefighters, other first responders, healthcare workers, and other essential workers in Arizona, 2020-2023

Background: Certain occupations have greater risk for per- and polyfluoroalkyl substances (PFAS) exposure because of PFAS use in occupation-associated materials. **Objective:** We sought to assess whether PFAS concentrations differed by occupation among certain Arizona workers and whether concentrations differed over time by occupation. **Methods:** Serum concentrations for 14 PFAS were measured among 1960 Arizona Healthcare, Emergency Responder, and Other Essential Worker Study participants. Samples were collected at enrolment and periodically during July 2020-April 2023. Occupational categories included firefighters, other first responders, healthcare workers, and other essential workers. We fit multilevel regression models for each PFAS to estimate differences in geometric mean concentrations or odds of PFAS detection at enrolment by occupational category. For participants with ≥ 1 serum sample, we evaluated for yearly longitudinal differences in PFAS concentrations by occupational category. We used other essential workers for comparison, and adjusted for age, sex, race and ethnicity, year, and residential county. **Results:** Adjusting for covariates, firefighters had higher perfluorohexanesulfonic acid (PFHxS), branched and linear perfluorooctanesulfonic acid (PFOS), and perfluoroheptanesulfonic acid (PFHpS) concentrations than other essential workers (geometric mean ratios 95% CIs: 1.26 [1.11-1.43]; 1.18 [1.06-1.32]; 1.19 [1.08-1.31]; and 1.19 [1.01-1.39], respectively). Healthcare workers had higher odds of detection of branched perfluorooctanoic acid (Sb-PFOA) and perfluorododecanoic acid (PFDoA) than other essential workers, adjusting for covariates (odds ratios 95% CIs: 1.35 [1.01-1.80]; 2.50 [1.17-5.34], respectively). During the 3-year study, we detected declines in PFAS concentrations among other essential workers; few longitudinal differences in concentrations by occupation were detected. **Impact statement:** Using data from a large prospective cohort of frontline workers in Arizona, we compared serum concentrations of 14 per-and polyfluoroalkyl substances (PFAS) among firefighters, other first responders, healthcare workers, and other frontline essential workers. We found that firefighters have higher concentrations of certain PFAS chemicals and the odds of detecting other PFAS chemicals are higher among healthcare workers compared with people in other occupations. Our findings highlight the importance of further action to reduce PFAS exposure within highly exposed occupational groups, such as firefighters, and the need to expand evaluation of exposure among other occupations, including healthcare workers.

Mitchell et al. 2025.

Journal of Exposure Science and Environmental Epidemiology, vol. 35, no. 3.

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Keywords: Firefighting; healthcare workers; occupational health; per-and polyfluoroalkyl substances.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41370-025-00753-7>

Airborne metals and microorganisms during work with historical books: Exposure and biomonitoring

Exposure to metals and microorganisms can pose health risks. Historical books often contain pigments with metals, and fungi. The aim of this study is to obtain knowledge about exposure to eight metals and microorganisms in a library in Denmark. Personal exposure of staff handling historical books (high-exposure group) and indoor and outdoor air samples were collected in three well-ventilated sites of a library. Urine samples were collected the next morning from the high-exposure group, a low-exposure group (colleagues not handling historical books), and a reference group. Eight metals were measured in air and urine samples using inductively coupled plasma mass spectrometry (ICP-MS). Bacteria and fungal species were identified using MALDI-TOF MS. Personal exposure to metals was higher than in stationary indoor and outdoor air samples, particularly for arsenic (As), lead (Pb), mercury (Hg), and cadmium (Cd), and some were spread to the indoor air. Personal exposure to As, Cd, and Hg showed a significant correlation with Pb levels. The overall indoor/outdoor ratio of personal exposure exceeded 1 for all metals except antimony (Sb) indicating potential indoor source. Additionally, Cd and As concentrations in some urine samples exceeded Biological Limit and Guidance Values. Most fungal species detected belonged to *Aspergillus* and *Penicillium*, and eight species are xerophilic. In conclusion, library staff were exposed to higher concentrations of metals as compared to outdoor air, warranting further research across different tasks and days for staff handling historical books to understand these risks better.

Muthalagu et al. 2025.

International Journal of Hygiene and Environmental Health, vol 266.

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

Keywords: Airborne metals; internal exposure; metal exposure; microorganisms; urine; Xerophilic fungi.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S1438463925000379?via%3Dihub>

Association of occupational noise exposure and extended high-frequency hearing loss in young workers with normal hearing

Objectives: Studies on the relationship between occupational noise exposure and extended high-frequency (EHF) hearing loss are limited. This study investigated the relationship between occupational noise exposure and EHF hearing loss in workers exposed to noise as measured by sound pressure level, exposure duration, and kurtosis to help provide a basis for early detection and prevention of hearing loss in noise-exposed workers. **Design:** A cross-sectional survey was conducted among 602 participants with 472 noise-exposed workers and 130 non-noise-exposed controls. General demographic characteristics, noise exposure data, and hearing thresholds at conventional frequencies (0.25 to 8 kHz) and EHF (9 to 16 kHz) were collected and analyzed. Linear mixed-effects model analyses between hearing thresholds of EHF and noise exposure indicators including the 8-h equivalent continuous A-weighted sound pressure level (LAeq,8h), cumulative noise exposure (CNE), and kurtosis-adjusted CNE (CNE-K) were conducted. **Results:** Among the 602 participants included in the analysis, 472 individuals (78.4%) were occupationally exposed to noise exposures ≥ 75 dBA. Significant differences ($p < 0.05$) were observed in sex, exposure duration, LAeq,8h, CNE, and CNE-K between the noise-exposed group and the nonexposed group. The mean hearing thresholds for all tested extended high frequencies ranging from 9 to 16 kHz were significantly higher in the noise-exposed group than in the nonexposed group ($p < 0.05$). The mean hearing thresholds of subjects in different groups of LAeq,8h exposures were generally stable with little variance in the conventional frequencies (0.25 to 8 kHz) but differed in the EHF range. Moreover, EHF hearing loss appeared to be most prominent in the subjects exposed to noise with $80 \text{ dBA} < \text{LAeq,8h} \leq 85 \text{ dBA}$. After the combination of the sound pressure level, exposure duration, and kurtosis by using the noise exposure indicators CNE and CNE-K, the subjects at the different noise exposures showed significant differences in hearing thresholds at EHF ($p < 0.05$). Linear mixed-effected model analyses showed that the CNE-K was the best to indicate noise-induced hearing loss among the three noise exposure indicators at EHF.

Conclusions: The results indicate that the EHF hearing threshold testing is more sensitive to identifying early occupational noise-induced hearing loss than conventional audiometry. The CNE-K, an indicator combining noise energy, exposure duration, and kurtosis, is a more comprehensive and effective method for assessing the risk of EHF hearing loss due to occupational noise exposure.

Xue et al. 2025.

Ear and Hearing, vol. 46, no. 3.

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Keywords: Complex noise; cumulative noise exposure; extended high-frequency audiometry; kurtosis; noise-induced hearing loss; occupational noise exposure.

Evidence Level: 4B

Link: https://journals.lww.com/ear-hearing/fulltext/2025/05000/association_of_occupational_noise_exposure_and.19.aspx

Occupational benzene exposure and risk of kidney and bladder cancers: A systematic review and meta-analysis

Introduction: Benzene is recognized as leukemogenic. However, the association between it and solid cancers has been the subject of less investigation. We aim to conduct a systematic review and meta-analysis to evaluate the association between occupational exposure to benzene and the risk of urinary tract cancer, including kidney and bladder. **Methods:** We included 41 cohort and case-control studies listed in the most recent International Agency for Research on Cancer (IARC) Monograph on benzene exposure and the result of a literature review to identify more recent studies. Forest plots of relative risk (RR) were constructed for kidney, bladder, and urinary tract cancer overall. A random-effects model was used to address heterogeneity between studies. Stratified analyses were conducted to explore effect modification.

Results: Our findings revealed an association between exposure to occupational benzene and kidney and unspecified urinary tract cancers (RR = 1.20, 95% confidence interval = 1.03-1.39), and an association of borderline statistical significance with bladder cancer (RR = 1.07, 95% confidence interval = 0.97-1.18). Publication bias was excluded for both kidney (P = 0.809) and bladder cancer (P = 0.748). Stratification analysis according to the selected study characteristics showed no difference except regarding the industry for kidney cancer (P < 0.000), with a stronger association in the chemical industry. An analysis by exposure level did not reveal any trend for kidney cancer, whereas there was a trend (P = 0.01) for bladder cancer.

Conclusion: Our study found an association between occupational benzene exposure and kidney cancer and a dose-effect association between benzene exposure and bladder cancer.

Seyyedsalehi et al. 2025.

European Journal of Cancer Prevention, vol. 34, no. 3.

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Keywords: Benzene; benzene exposure; kidney cancer; bladder cancer.

Evidence Level: 1A

Link:

https://journals.lww.com/eurjcancerprev/fulltext/2025/05000/occupational_benzene_exposure_and_risk_of_kidney.2.aspx

Human exposure to polycyclic aromatic hydrocarbons during structure fires: Concentrations outside and inside self-contained breathing apparatus and in vitro respiratory toxicity

Structure fires release several health-hazardous compounds, including polycyclic aromatic hydrocarbons (PAHs), and the use of self-contained breathing apparatus (SCBA) is mandatory to protect firefighters' airways. The characterization of PAHs released during structure fires is scarce, principally in European countries. This work elucidates the mechanisms of toxic effects associated with human exposure to PAHs released during structure fires, by assessing for the first time, the levels in the breathable air of sapper

firefighters with and without the use of SCBA. An in vitro co-culture model of air-blood barrier was used to evaluate respiratory toxicity. Concentrations of total PAHs (Σ PAHs) inside the burning structure were 8.20-19.8 times higher than the values monitored inside fire stations (11.5-28.0 $\mu\text{g}/\text{m}^3$ versus 1.41 $\mu\text{g}/\text{m}^3$; $p < 0.005$) and 2688-5872 times higher than the levels detected inside the SCBA used during the fire events. Levels of carcinogenic PAHs were 6.90-20.5 times higher than observed for the control group ($p \leq 0.005$). Inside to outside ratios (<1) suggested the contribution of PAHs from fires to the levels detected inside the protection system. Exposure to fire emissions increased the risk of lung cancer. The use of SCBA system substantially reduced exposure to PAHs, still levels detected outside/inside the SCBA facemask significantly reduced the viability of alveolar and bronchial cell lines ($<70\%$). Benzo(a)pyrene (100 %), naphthalene and phenanthrene (97.5 %), benzo(b+j)fluoranthene (90 %), and fluorene (87.5 %) found inside the SCBA mask were able to permeate the co-culture model of air-blood barrier. More studies need to corroborate these preliminary findings and evaluate the synergic effect of fire effluent complex mixtures and their contribution to respiratory toxicity.

Teixeira et al. 2025.

Environmental Pollution, vol. 373.

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Keywords: Fire pollutants; human exposure; in vitro viability; in-vitro respiratory model; respiratory protection.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S0269749125004853?via%3Dihub>

Correlation between 6PPD-Q and immune along with metabolic dysregulation induced liver lesions in outdoor workers

Outdoor workers who are exposed to traffic-derived pollutants often suffer from a range of diseases, with liver disease being particularly notable. Recently, a rubber stabilizing additive antioxidant N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD) and its transformed-quinone product 6PPD-quinone (6PPD-Q) attracted attention. However, their implication for human health remains inadequately elucidated. In this study, outdoor and indoor workers were recruited to analyze 6PPD and 6PPD-Q distribution in their serum and urine. Simultaneously, blood cell counts, liver function, renal function, blood glucose level, and lipid profile were evaluated by 23 physiological parameters. For the first time, we found that the concentrations of 6PPD (0.54 - 1.66 $\mu\text{g L}^{-1}$) and 6PPD-Q (0.58 - 4.04 $\mu\text{g L}^{-1}$) in outdoor group serum were two- and three-fold in the indoor group, respectively. Compared with indoor workers, 18 biochemical parameters, notably total bilirubin and indirect bilirubin, were elevated in outdoor workers ($p < 0.05$). A computed tomography scan showed liver lesions in 60% of the outdoor group, whereas only 30% of the indoor group. The statistical analysis exhibited that significant positive correlations exist between the serum 6PPD-Q and immune cell counts, total bilirubin, indirect bilirubin, and triglycerides in human beings ($p < 0.05$). The logistic regression implied that for each 1 $\mu\text{g L}^{-1}$ increase of 6PPD-Q in serum, the risk of human liver lesions increased by 2.31 times. Our results suggest that outdoor exposure is associated with increased concentrations of 6PPD-Q in serum, which could potentially influence glucose and lipid metabolism, immune cell regulation, and liver health.

Qin et al. 2025.

Environment International, vol. 199.

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Keywords: 6PPD-Q; human health; human serum; liver lesion; outdoor worker.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0160412025002065?via%3Dihub>

Sedentary practices

Development, implementation and evaluation of a smartphone application aimed to reduce sedentary time and increase physical activity among Indian sedentary office workers - Findings from SMART-STEP trial

Background: Excessive sedentary time (ST) is linked to an increased risk of cardiometabolic diseases. Although various behavioural interventions have emerged to reduce ST, the potential of smartphone (SmPh)-based interventions remains relatively unexplored in workplace settings. This study aimed to explore the development, implementation and acceptability of a SmPh application among Indian desk-based office workers. **Methods:** One hundred thirty-six office workers were randomised to one of three interventions for six months: (1) SmPh-based ST and physical activity (PA) reminders (SMART); (2) traditional education (TRADE) and (3) usual work group (CONT). A threshold of 70% adherence (equivalent to responding to at least 580 out of 828 assigned prompts) was used to classify participants as 'compliant'. Of 44 SMART group participants who were assigned to 24 weeks of intervention, nine participants were purposefully selected based on compliance. Moreover, they were interviewed for potential barriers associated with the SmPh application using semi-deductive approach. **Results:** The SMART STEP application was developed over eight months, during which three versions were created and pilot tested. The cost of application development was reasonable (\approx \$1,860). Of 44 participants who received SmPh application-based reminders, 37 completed the two follow-ups at 3rd and 6th month. Mean prompt engagement rates, defined as 'the percentage of prompts participants actively responded to', during the 1st, 2nd, 3rd, 4th, 5th, and 6th months were 77% (n = 107), 59% (n = 82), 54% (n = 74), 45% (n = 63), 43% (n = 59), and 31% (n = 43), respectively. Barriers such as workload, lack of movement sensing, and insufficient organizational and peer support were key factors contributing to the decline in long-term engagement among office workers. **Conclusion:** The SMART-STEP application appears to be an affordable and promising solution for reducing ST and promoting PA among office workers in low-resource settings. However, enhancements such as embedding movement sensing technology, organizational policies and peer education are needed to improve long-term usability and acceptability.

Chandrasekaran et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Acceptability; productivity; safe work; sedentary time; smartphone application; sustainable industry.

Evidence Level: 3B

Link: <https://bmcpublikealth.biomedcentral.com/articles/10.1186/s12889-025-23049-9>

Physical activity

Exploring the 'fit for work' principle: The association between occupational physical activity, cardio-respiratory fitness, and mortality – A1 meta-analysis of male worker data

Objectives: This individual participant data meta-analysis investigates the association between occupational physical activity (OPA) and both cardiovascular mortality and all-cause mortality across different cardio-respiratory fitness (CRF) groups among male workers. **Methods:** Data were pooled from five European cohort studies. OPA was categorized into three levels and CRF into low, moderate, and high tertiles. OPA was assessed using self-reports and CRF through objective measurements. Two-stage meta-analyses were conducted. First, we analyzed each cohort using Cox-regression models then we pooled results with random effects model to evaluate the associations between OPA and both cardiovascular and all-cause mortality, stratified by CRF. Models were adjusted for age, body mass index, smoking status, leisure-time physical activity, and educational level. **Results:** Among 9922 men (mean age 46.8, standard deviation 6.7, years), 55.7% died during an average 25.6-year follow-up, of which 29.3% died from

cardiovascular causes. Individuals with low CRF and high levels of OPA showed increased risks of cardiovascular [hazard ratio (HR) 1.27, 95% confidence interval (CI) 1.04-1.55] and all-cause mortality (HR 1.22, 95% CI 1.07-1.40) compared to those with low CRF and low levels of OPA. High CRF mitigated cardiovascular mortality risk (HR 1.08, 95% CI 0.79-1.48) but not all-cause mortality (HR 1.27, 95% CI 0.98-1.83) for those with high OPA. **Conclusions:** Our findings for cardiovascular mortality suggest that high CRF levels may protect workers with physically demanding jobs from adverse cardiovascular outcomes, supporting the 'fit for work' principle. However, this protective effect was not observed for all-cause mortality.

Ketels et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Fit for work; occupational physical activity; cardiovascular fitness; mortality.

Evidence Level: 1A

Link: <https://www.sjweh.fi/article/4218>

Musculoskeletal health

Work-related musculoskeletal disorders among women office workers in kingdom of Saudi Arabia: A cross-sectional study on the impacts of ergonomics knowledge in the work from home era

Objectives: The working-from-home trend aimed at enhancing work-life balance may increase absenteeism due to musculoskeletal disorders (MSDs). This study aims to assess office ergonomic knowledge, estimate the prevalence of MSDs, and identify the risk factors that may increase MSD risk. **Design:** A cross-sectional design was employed using a valid and reliable questionnaire to attain the objectives. **Results:** MSDs were prevalent, most commonly affecting the shoulders. The mean ergonomic knowledge score was 3.98 out of 9. According to the Rapid Office Strain Assessment, 83% of the workers had a low MSD risk, whereas 16% had a high risk. **Conclusions:** The study revealed the high prevalence of MSDs. Most of the employees had a low MSD risk, and their knowledge of ergonomics was low to moderate. The factors concluded may assist in tailoring the educational program.

Bin Sheeha et al. 2025.

Journal of Occupational and Environmental Medicine, vol. 67, no. 5.

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Keywords: Rapid Office Strain Assessment (ROSA); Saudi female office workers; ergonomic knowledge; musculoskeletal disorders (MSDs); prevalence and risk factors; work-from-home (WFH).

Evidence Level: 4B

Link:

https://journals.lww.com/joem/fulltext/2025/05000/work_related_musculoskeletal_disorders_among_women.6.aspx

Low back pain among the working-age population: From the global burden of disease study 2021

Background: The burden of low back pain in the global working-age population (WAP) is substantial and exhibits unique characteristics. This study aimed to evaluate global, regional, and national trends in low back pain prevalence among the WAP over a 32-year period. **Methods:** We utilized data from the 2021 Global Burden of Disease (GBD) study to evaluate the global impact of low back pain in the WAP from 1990 to 2021. A secondary analysis focused on temporal trends and a decomposition analysis of low back pain. **Results:** From 1990 to 2021, there was a continuous decrease in the rate of low back pain among the global WAP. The age-standardized incidence rate (ASIR) decreased from 4,111 (95% uncertainty interval [UI]: 2,682-5,619) to 3,676 (95% UI: 2,563-5,021), with an annual average percentage change (AAPC) of -0.36. The age-standardized prevalence rate (ASPR) decreased from 9,731 (95% UI: 7,061-12,970) to 8,632 (95%

UI: 6,296-11,517), with an AAPC of -0.39. The age-standardized disability-adjusted life years (DALYs) rate (ASDR) decreased from 1,108 (95% UI: 686-1,650) to 982 (95% UI: 608-1,460), with an AAPC of -0.39. However, the number of low back pain cases in the global WAP continued to increase. Regions with a middle Socio-demographic Index (SDI), South Asia, China, and India carried a heavier burden of low back pain in the WAP. The burden was also greater among females, with the gender gap continuing to widen. Decomposition analysis revealed that population growth and population aging were the predominant driving factors. **Conclusions:** Despite the overall reduction in the ASIR, ASPR, and ASDR of low back pain among WAP, it remained a leading cause of disability worldwide. More attention needs to be paid to the low back pain burden among WAP in middle-SDI regions, countries with a large population base, and females. Significant gender and regional disparities persist within WAP, highlighting the necessity for targeted preventive and therapeutic interventions to alleviate the burden of low back pain and reduce the risks of disability.

Zhang et al. 2025.

BMC Musculoskeletal Disorders, vol. 26, no. 1.

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Keywords: Epidemiology; Global disease Burden 2021; low back pain; working-age population.

Evidence Level: 4B

Link: <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-025-08704-x>

Exploring the relationship between mental work load, work ability, and musculoskeletal disorders: A cross-sectional modeling study among health service workforces in Iran

Introduction: The health service workforces play a crucial role in shaping a nation's health system efficiency, making it vital to understand factors affecting their performance. This study examined the relationship between mental workload, work ability, and work-related musculoskeletal disorders (WMSDs) among employees at comprehensive health service centers in Saveh, Arak province, Iran. **Materials & methods:** The cross-sectional study involved 197 randomly selected personnel whose WMSDs prevalence was evaluated using the Nordic questionnaire. Work ability was assessed through the Work Ability Index (WAI), and mental workload was measured using the NASA Task Load Index (NASA-TLX). All data analysis was performed using SPSS v 24.0 software. **Results:** The average age and work experience of the participants were determined to be 35.74 ± 7.52 and 11.63 ± 8.59 years, respectively. The highest prevalence was reported in the lumbar region, with a lifetime prevalence of 63.5% and an annual prevalence of 60.9%. The average mental workload and work ability were calculated to be 63.24 ± 13.26 and 34.86 ± 7.61 , respectively. The highest prevalence of WMSDs (89.5%) was observed in the lower back region among women aged 45-54 years. A significant relationship was identified between work experience and age with work ability and mental workload ($P < 0/01$). Furthermore, an increase of one point in work ability score leads to a decrease in WMSDs in the neck, wrists/hands, low back and hips/thighs regions by 13.5%, 8%, 11.5%, and 9%, respectively. **Conclusions:** The study underscores the need to enhance the physical, psychological, and social environments of health service employees. Implementing targeted educational programs can improve task performance and mitigate high mental workload effects, ultimately reducing WMSDs and improving staff well-being.

Rafiee et al. 2025.

PLoS One, vol. 20, no. 5.

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Keywords: Mental work load; work ability; musculoskeletal disorders; Iran.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0322993>

Effects of 24-weeks in-field use of a back-supporting exoskeleton on biomechanics, work intensity and musculoskeletal discomfort: A randomized controlled trial among logistic workers

The trial investigated the impact of a back-supporting exoskeleton (BSE) on biomechanics, work intensity, and musculoskeletal discomfort among logistic-workers over 24-weeks in a field-setting. Twenty workers were randomized into intervention and control groups, performing daily order-picking with and without the BSE, respectively. Effects on muscles activity and kinematics were measured during standardized tasks before and after the intervention period, while work intensity and musculoskeletal discomfort were rated throughout the intervention period. The results indicated significant reductions in back muscle activity during lifting tasks with BSE assistance before and after 24-weeks. Although three BSE users stopped using the exoskeleton during the intervention period, the remaining workers progressively increased their daily BSE use associated with an overall decrease in perceived work intensity throughout the 24-weeks. The trial suggests that the effect of the BSE on back muscle activity remains constant over 24-weeks, opposite what was hypothesized based on previous research on training.

Jakobsen et al. 2025.

Applied Ergonomics, vol. 125.

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

Keywords: Long-term use; occupational exoskeletons; passive assistive device; work-related musculoskeletal disorders; workload.

Evidence Level: 2B

Link: <https://www.sciencedirect.com/science/article/pii/S0003687025000055?via%3Dihub>

Guiding and supporting mental health and wellbeing

Mental health

Post-traumatic stress disorder and post-traumatic growth in firefighters: Examining the moderating effects of resilience on occupational safety behaviors

Background: Posttraumatic stress disorder (PTSD) and posttraumatic growth (PTG) represent divergent outcomes following trauma exposure in high-risk professions. This investigation examined the complex interplay between PTSD, PTG, and resilience in relation to occupational safety behaviors among Turkish firefighters. **Methods:** A multi-site cross-sectional study was conducted across five metropolitan fire departments in Turkey (N = 122). Participants completed validated psychometric instruments including the PTSD Checklist for DSM-5 (PCL-5), Posttraumatic Growth Inventory-Expanded Form (PTGI-X), Brief Resilience Scale, alongside detailed evaluations of safety practices, perceptions, and behaviors that assessed protocol adherence, equipment maintenance, training attendance, and safety communication metrics. Hierarchical multiple regression and chi-square analyses examined the relationships between psychological factors and safety outcomes, with particular attention to moderating effects. **Results:** Analyses revealed significant associations between psychological adaptation patterns and safety-critical behaviors. PTSD symptomatology demonstrated negative correlations with safety protocol adherence ($r = -.24$, $p < .01$) and safety awareness ($r = -.21$, $p < .01$). PTG manifested distinct cultural patterns, with Personal Strength emerging as the predominant domain ($M = 3.10$, $SD = 1.08$). A distinct disparity emerged between technical and psychological safety dimensions, with high adherence to equipment-related protocols (breathing apparatus maintenance: $M = 4.00$) contrasting markedly with poor implementation of psychological safety practices (comfort in communicating safety concerns: $M = 1.66$). Regression analyses indicated that psychological factors accounted for 28% of the variance in safety performance metrics, with resilience moderating the relationship between PTSD symptomatology and safety outcomes. **Conclusions:** This investigation identifies critical relationships between psychological adaptation and occupational safety in firefighting, revealing how PTSD symptoms and PTG distinctly influence safety behaviors through

culturally mediated patterns. The significant gap between adherence to technical safety protocols versus psychological safety practices underscores the need for integrated interventions that address both domains. These findings support developing comprehensive programs that enhance psychological resilience while maintaining technical safety standards in emergency services, suggesting a paradigm shift in occupational safety approaches for high-risk professions.

Bakirci et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Emergency services; firefighters; occupational safety; posttraumatic growth; posttraumatic stress disorder; psychological resilience.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-22908-9>

Associations between exposure to potentially psychologically traumatic events and mental ill health among New Zealand firefighters: A cross-sectional study

Background: Fire and emergency services personnel face unique occupational hazards, including repeated exposure to potentially psychologically traumatic events (PPTs), which can impact their mental health. Despite growing awareness, comprehensive data on the mental health of fire and emergency services personnel in New Zealand remains sparse. **Purpose:** This study examined the prevalence of symptoms of mental health disorders, including PTSD, Major Depressive Disorder, and Generalized Anxiety Disorder, and assessed the association between PPT exposure, coping mechanisms, and mental ill health among New Zealand firefighters and commanders. **Methods:** A comprehensive online survey using the Qualtrics platform was administered to fire and emergency personnel, assessing exposure to PPTs and various mental health parameters. The survey utilized standard assessment tools including the PHQ-9, GAD-7, SPRINT, and AUDIT-C alongside measures of life satisfaction, emotional numbing and demographic questions. **Main findings:** The prevalence of symptoms of Major Depressive Disorder (24 %), Generalized Anxiety Disorder (13 %), and probable PTSD (13 %) among 1264 fire and emergency personnel are higher than those observed in the general population. High exposure to PPTs was associated with higher odds of reporting moderate-to-severe symptoms of Major Depressive Disorder, Generalized Anxiety Disorder, and probable PTSD. Also of note were findings revealing a high prevalence of potentially hazardous drinking patterns (68 %). **Conclusions:** Highlights a critical need for effective mental ill health prevention and support programs tailored to fire and emergency personnel, considering their high exposure to PPTs and elevated risk of experiencing symptoms of Major Depressive Disorder, Generalized Anxiety Disorder, and PTSD.

Mackay et al. 2025.

Comprehensive Psychiatry, vol. 139.

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Keywords: Firefighters; first responders; mental health; psychological wellbeing; trauma exposure.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0010440X25000227?via%3Dihub>

Employee preference and use of employee mental health programs: Mixed methods study

Background: Mental health issues represent a prevalent challenge for employees and their employers, leading to substantial impacts on individuals, society, and the economy. Different employee mental health programs (EMHPs) can support employees in preventing and treating mental health issues. However, the impact of such EMHPs depends largely on the use behaviours of employees. **Objective:** This study aimed to gain deeper insights into employees' attitude and use behaviours regarding EMHPs by investigating (1) employee preference and intention to use EMHPs, (2) factors that predict use, and (3) key facilitators and barriers influencing use. **Methods:** An exploratory sequential mixed methods approach was applied,

including a scoping review, qualitative interviews, and a quantitative web-based survey. Semistructured qualitative interviews were conducted with 15 employees to gain insights into EMHPs from the employee perspective and inform the creation of a web-based questionnaire. The quantitative web-based survey was conducted to collect representative primary data on employees' perspectives on different EMHPs using 7-point Likert scales. The collected quantitative data were analysed through descriptive and inferential statistics, including repeated measures ANOVAs and chi-square tests. **Results:** The final sample of the web-based survey consisted of 1134 participants and was representative across several sociodemographic characteristics. Analysis of the sample revealed that when given the choice, employees preferred digital (n=666, 58.73%) and self-intervention (n=590, 52.03%) EMHPs. Employees were most likely to use EMHPs focused on prevention (mean 4.89, SD 1.61). Intention to use EMHPs was predicted by age (young: mean 4.59, SD 1.2; old: mean 4.19, SD 1.4; $P < .001$; Cohen $d = 0.32$), education (academic degree: mean 4.68, SD 1.24; no academic degree: mean 4.26, SD 1.32; $P < .001$; Cohen $d = 0.32$), and mostly by company culture (positive company culture: mean 4.61, SD 1.27; negative company culture: mean 3.99, SD 1.27; $P < .001$; Cohen $d = 0.49$). Cost coverage (n=345, 30.42%) and ease of use (n=337, 29.72%) were critical facilitators of use. **Conclusions:** Employers can have a positive contribution to employee mental health by starting to offer EMHPs, preferably digital self-intervention programs for prevention; creating and maintaining the right work environment and culture; and ensuring cost coverage for the EMHP.

Sevov et al. 2025.

JMIR Human Factors, vol. 12.

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Keywords: Digital health; employee mental health programs; employee well-being; facilitators and barriers; intention to use; mental health; mixed methods; workplace.

Evidence Level: 5B

Link: <https://humanfactors.jmir.org/2025/1/e65750>

Trauma exposure, post-traumatic stress disorder and alcohol and other drug use among Australian public safety personnel

Objective: This study investigated the rates of workplace trauma exposure, probable post-traumatic stress disorder (PTSD) and alcohol and other drug use among Australian public safety personnel (PSP). It also identified factors associated with hazardous or harmful alcohol and other drug use. **Method:** Data were collected through an online survey distributed to PSP in three Australian agencies between May and October 2021. A total of 539 PSP completed the survey. The survey included questions about demographic and work-based characteristics, trauma exposure, PTSD and alcohol and other drug use. **Results:** Most participants (86.8%) had experienced at least one type of traumatic event at work. Probable PTSD was identified in 39.4% of respondents. Hazardous or harmful alcohol use was reported by 33.1% of participants, while 13.3% reported harmful drug use. Analyses revealed that probable PTSD and higher numbers of workplace traumatic event types were significantly associated with greater odds of hazardous or harmful alcohol use (ORs 1.88 and 1.04, respectively). Identifying as female and meeting criteria for probable PTSD was associated with greater odds of harmful drug use (OR = 1.86) and identifying as male with lower odds of harmful drug use (OR = 0.23). **Conclusion:** The study highlights the high prevalence of trauma exposure, probable PTSD and hazardous or harmful substance use among Australian PSP. The findings suggest a need for targeted interventions to address the mental health and substance use challenges in this population, particularly those aimed at mitigating the effects of workplace trauma and providing support for PTSD and substance use disorders.

Sercombe et al. 2025.

Australian & New Zealand Journal of Psychiatry, vol. 59, no. 5.

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Keywords: Public safety personnel; alcohol and other drug use; post-traumatic stress disorder; trauma; workplace mental health.

Evidence Level: 4A

Link: <https://journals.sagepub.com/doi/10.1177/00048674251324814>

Mental health in construction industry: A global review

Work-related stress is a major contributing factor to the relatively high number of deaths from suicide and other mental disorders among those who work in the construction industry. Despite the knowledge that unmanaged stress can manifest as depression and ultimately trigger thoughts of suicide or even the act itself, workers' mental health is often neglected. This study aims to identify the risk factors that are at the root of the workers' mental health challenges, as well as the strategies that can be initiated to overcome or at least mitigate them. To accomplish this, a systematic literature review was conducted using the PRISMA method, and 132 relevant publications that met the pre-defined inclusion criteria were selected for further analysis. From the data analysis, 45 risk factors were identified and classified into five categories based on the literature and the definition of stressors. The most frequently cited mental health risk factors were revealed to be gender inequality (diversity and equity category), poor working conditions (health-related category), work overload (job demand category), poor work-life balance (organizational category), and lack of social support (personal category). Thirty-two (32) intervention strategies were identified and divided into primary, secondary, and tertiary types. It was evident from the findings that combining all three types of interventions is the most effective way to improve the mental health of the construction workforce. The findings from this study provide valuable insights for policymakers and regulatory agencies who develop and implement policies aimed at improving mental health and occupational safety in the construction industry.

Pamidimukkala et al. 2025.

International Journal of Environmental Research and Public Health, vol. 22, no. 5.

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Keywords: Construction workforce; mental health; occupational stress; risk factors; strategies.

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/22/5/802>

Bullying, harassment and occupational violence

Burnout Syndrome in forensic medicine and its association with vicarious trauma, posttraumatic stress syndrome and occupational stress

The burnout phenomenon is a subject of considerable interest due to its impact on both employee well-being and scientific inquiry. Workplace factors, both intrinsic and extrinsic, play a pivotal role in its development, often leading to job dissatisfaction and heightened burnout risk. Chronic stress and burnout induce significant dysregulation in the autonomic nervous system and hormonal pathways, alongside structural brain changes. This paper presents a preliminary review of the literature on burnout syndrome among forensic science workers, focusing on the prevalence of this phenomenon and its triggers. This review aims to consolidate existing research on burnout among forensic medicine workers, highlight significant findings, and encourage further studies. Symptoms range from demoralization to somatic complaints. The Maslach Burnout Inventory (MBI) was the main tool in assessing burnout levels alongside measures of occupational stress, vicarious trauma and posttraumatic stress syndrome. Forensic medicine workers face unique stressors, with notable impacts on burnout levels. These workers experience challenges such as workplace conflicts and exposure to traumatic cases, leading to moderate or high burnout levels, particularly, emotional exhaustion, depersonalization or low personal accomplishment. Despite the prevalence of burnout, many forensic medicine workers lack access to support networks and perceive a disregard for their well-being from supervisors. There is a pressing need for further research to understand the biological mechanisms, susceptibility factors, and discover diagnostic markers of burnout syndrome, with the goal of its recognition as a psychiatric disorder in diagnostic manuals like the Diagnostic and Statistical Manual of Mental Disorders.

Oprinca-Muja et al. 2025.

International Journal of Legal Medicine, vol. 139, no. 3.

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Keywords: Burnout; forensic medicine; maslach; occupational stress; PTSD; vicarious trauma.

Evidence Level: 6A

Link: <https://link.springer.com/article/10.1007/s00414-024-03398-7>

Psychosocial issues

Associations of minority stress and employment discrimination with job quality among sexual and gender-minority workers

Objectives: This study aimed to describe how minority stress and employment discrimination are associated with job quality (ie, employment type and income) among sexual- and gender-minority (SGM) workers. **Methods:** We conducted a pooled cross-sectional analysis of the 2021 and 2022 surveys from a national study of SGM adults in the United States. Using multinomial logistic regression models and stratification by six gender groups, we examined associations of minority stress and past-year employment discrimination with job quality. **Results:** Among 4221 workers, 22.0% experienced precarious employment and 6.8% were unemployed. Approximately half earned \leq US\$50 000. The mean minority stress score was 14.41, indicating moderate-to-severe minority stress. A one-standard-deviation increase in minority stress was associated with higher odds of precarious employment [adjusted odds ratio (OR_{adj}) 1.17, 95% confidence interval (CI) 1.08-1.26], unemployment [OR_{adj} 1.36 (95% CI 1.19-1.56)], earning \leq \$20 000 USD [OR_{adj} 1.57 (95% CI 1.36-1.80)], and earning US\$20 001-50 000 [OR_{adj} 1.48 (95% CI 1.32-1.66)]. Employment discrimination was reported by 14.4% of all workers and was associated with precarious employment [OR_{adj} 1.25 (95% CI 1.01-1.54)], unemployment [OR_{adj} 2.11 (95% CI 1.54-2.89)], and earning US\$20 001-50 000 compared to \geq US\$100 001 [OR_{adj} 1.45 (95% CI 1.07-1.96)]. Transgender and gender-diverse (TGD) workers faced poorer job quality, greater minority stress, and employment discrimination than cisgender sexual minority workers. **Conclusions:** Higher minority stress levels and employment discrimination were associated with worse job quality among SGM workers. Future labor market reforms should reduce minority stress and employment discrimination, as well as improve job quality, for SGM workers.

Kinitz et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Minority stress; discrimination; job quality; gender minority; sexual minority.

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/4221>

Long-term impact of being bullied at school on job satisfaction among middle-aged workers: Findings from a 50-year prospective study of the 1958 British Birth Cohort

School bullying victimization may deteriorate job satisfaction as well as life satisfaction. This study assessed the effects of school bullying on job satisfaction in middle-age. We used data collected in 1965 (when the participants were aged 7 years), 1969 (11 years), and 2008 (50 years), from a 50 year prospective study of the 1958 British Birth Cohort. Bullying victimization was rated via parental interviews when the participants were 7 and 11 years of age. A combined variable of bullying victimization (never, occasionally, and frequently) at these two ages was used. A self-reported questionnaire was administered to assess job satisfaction. Hierarchical multiple regression analyses, adjusted for possible confounders, were conducted to clarify the association between school bullying and job satisfaction later in life. Of 4,879 middle-aged workers, 43% (occasionally bullied: 28%; frequently bullied: 15%) reported bullying-related victimization. No significant association was identified between school bullying and job satisfaction when job satisfaction was treated as a continuous variable; however, frequent bullying was significantly negatively associated

with job satisfaction when job satisfaction was treated as a binary variable. Experiences of school bullying were more strongly reflected in life satisfaction than in job satisfaction. Future studies should examine the mechanism of this relationship.

Iwanaga et al. 2025.

Industrial Health, vol. 63, no. 3.

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

Keywords: Bullying; employment; job satisfaction; victimization; well-being.

Evidence Level: 4B

Link: https://www.istage.jst.go.jp/article/indhealth/63/3/63_2024-0141/_article

Spiritual care as a mediator in the relationship of the light and dark triad with life and work satisfaction among hospice workers

Background: Spiritual care refers to the provision of support that recognizes and responds to the spiritual needs of patients, particularly in times of illness, distress, or crisis. It encompasses addressing questions of meaning, purpose, connection, and transcendence, as well as supporting religious and existential concerns. Working in palliative care requires exceptional interpersonal skills, as hospice workers often develop close relationships with patients and their families during critical moments in their lives. While much research highlights the significance of spiritual care for the well-being of patients and their loved ones, growing attention is being given to its role in the functioning of palliative care workers. **Material and methods:** This study examined a mediation model in which spiritual care mediated the relationship between the light and dark triads and life and work satisfaction among hospice workers. A cross-sectional study was conducted with 261 hospice workers in Poland. **Results:** Results indicated that, among palliative care workers, the light triad was positively associated with spiritual care, life satisfaction, and work satisfaction, while the dark triad was negatively associated only with spiritual care. Additionally, spiritual care was positively linked to both life and work satisfaction. Mediation analysis revealed that spiritual care mediated the relationship between the light triad and life satisfaction, as well as the relationship between the dark triad and both life and work satisfaction among palliative care workers. **Conclusions:** These findings from a cross-sectional study highlight the crucial role of spiritual care in enhancing the life and work satisfaction of hospice workers. Given its significance, integrating spiritual care training and support systems into palliative care settings could foster both personal well-being and professional fulfilment among hospice workers. Future research should explore interventions aimed at strengthening spiritual care competencies and examine their long-term effects on healthcare professionals' resilience and job satisfaction. *Med Pr Work Health Saf.* 2025;76(2):77-86.

Kocur et al. 2025.

Medycyna Pracy, vol. 76, no. 2.

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

Keywords: Dark triad; hospice workers; life satisfaction; light triad; spiritual care; work satisfaction.

Evidence Level: 4B

Link: <https://medpr.imp.lodz.pl/Spiritual-care-as-a-mediator-in-the-relationship-of-the-light-and-dark-triad-with,203378,0,2.html>

Need for recovery and work-family conflict in the armed forces: A latent profile analysis of job demands and resources

Building on the Job Demands-Resources model, this study aims to investigate the interaction between job characteristics and work-related stress indicators in a sample of 211 Italian Armed Forces personnel. Using Latent Profile Analysis (LPA), three distinct profiles emerged based on job demands (workload and perception of performing high-risk work) and resources (relationships with colleagues and supervisors,

perceived meaningfulness of work, and feedback received on quality of work). The first profile, characterized by high demands and low resources, was associated with higher levels of work-family conflict and need for recovery (an indicator of perceived fatigue at the end of the workday). The second profile, characterized by high resources and low demands, showed the lowest levels of both need for recovery and work-family conflict, while the third profile showed average scores on demands, resources, and outcome variables. These findings are in line with the chosen theoretical framework and prompt several reflections on work-related well-being in the armed forces and what can promote it. Stemming from the results is the importance of organizational interventions designed to protect employees' well-being and support their effective functioning. Such interventions are particularly critical within the armed forces context, where operational performance has a direct impact on the safety and well-being of citizens.

Pace et al. 2025.

International Journal of Environmental Research and Public Health, vol. 22, no. 5.

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Keywords: Armed forces; job demands–resources model; need for recovery; well-being; work-related stress; work–family conflict.

Evidence Level: 6B

Link: <https://www.mdpi.com/1660-4601/22/5/795>

Long-term chronicity of work addiction: The role of personality and work motivations

The current comprehensive study investigated the relationship between work addiction (WA), personality traits, and motivations, focusing on their roles in WA persistence and recovery. The objective was to explore the capacity of personality dimensions and work motivation to predict the chronicity of WA, symptom variation, and gender differences. Over a four-year study of 586 participants (51.4% female), the Bergen Work Addiction Scale was used to assess WA at two time points. Individual differences were assessed by Rosenberg Self-Esteem Scale, Narcissistic Admiration and Rivalry Questionnaire, Multidimensional Perfectionism Scale, short Brief Symptom Inventory, Ruminative Response Scale, and Multidimensional Work Motivation Scale at Time 1. Latent class analysis identified two primary groups in the entire sample: individuals with persistent WA and those without. While females aligned with these groups, males exhibited five distinct latent classes. In females, chronic WA was associated with lower self-esteem, higher self-oriented and socially prescribed perfectionism, rumination, psychological distress, and increased extrinsic motivation. In males, the chronic WA group exhibited heightened levels of perfectionism, rumination, psychopathological distress, lower self-esteem, and elevated extrinsic and introjected regulations compared to the other WA groups. These findings emphasize the possibility of WA persisting over an extended period, with personality traits and motivations playing a significant role in this endurance. These results not only advance our understanding of WA but also provide valuable insights for future research on protective factors against WA. Furthermore, the findings have significant practical implications, including addressing excessive perfectionism in work environments and offering avenues for future research.

Kun et al. 2025.

BMC Psychology, vol. 13, no. 1.

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Keywords: Longitudinal; personality; psychopathological distress; work addiction; work motivation; workaholism.

Evidence Level: 4B

Link: <https://bmcp psychology.biomedcentral.com/articles/10.1186/s40359-025-02907-6>

Occupational history of psychosocial work environment exposures and risk of autoimmune rheumatic diseases: A Danish register-based cohort study

Objectives: This population-based cohort study examined the association between psychosocial work environment exposures and autoimmune rheumatic diseases, including rheumatoid arthritis (RA), systemic sclerosis (SS), and systemic lupus erythematosus (SLE). **Methods:** The total Danish working population, 19-58 years of age (N=2 319 337) was followed from 1997-2018 (37 529 977 person years). Quantitative demands, decision authority, emotional demands, job insecurity, physical violence, role conflicts and possibilities for development at work, as well as a combined psychosocial index were assessed by job-exposure matrices (JEM) and linked with diagnoses of autoimmune rheumatic diseases, ie, RA, SS, and SLE identified in The Danish National Patient Registry. For each psychosocial work environment exposure, recent exposure, accumulated exposure, and number of years with high exposure level were calculated for every employee. Associations with autoimmune rheumatic diseases were assessed by Poisson regression analyses. **Results:** The results show that employees in occupations with higher decision authority and, to some degree, possibilities for development at work, have lower risks of autoimmune rheumatic diseases, while employment in occupations with high risk of physical violence involves a higher risk of rheumatoid arthritis. No association was observed for job insecurity or role conflicts at work. The results on quantitative demands, emotional demands and the psychosocial index were less conclusive. **Conclusion:** These findings generally do not support that psychosocial work environment exposures are major risk factors for autoimmune rheumatic diseases, but low decision authority, possibilities for development at work, physical violence and possibly the sum of recent adverse psychosocial exposure may be of importance.

Nielsen et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Psychosocial work environment exposures; Autoimmune rheumatic diseases; occupation.

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/4220>

The mediating effect of psychosocial work factors in the prospective associations between organisational changes and self-rated health: Results from the national French working conditions survey

Objectives: Organisational changes have been found to be associated with health outcomes but the underlying mechanisms remain understudied. The study aimed at exploring the prospective associations of organisational changes with self-rated health and the mediating effect of psychosocial work factors in these associations. **Study design:** The study had a prospective design. **Methods:** The study was based on a nationally representative sample of 14,989 employees surveyed in 2013, 2016, and 2019 (national French working conditions survey). The associations between seven organisational changes, a large set of psychosocial work factors, and the incidence of poor self-rated health were studied using weighted robust Poisson regression models and the Karlson, Holm and Breen (KHB) method. Covariates included gender, age, marital status, stressful life events, social support outside work, occupation, and economic activity of the company. **Results:** The exposure to any organisational change predicted the incidence of poor self-rated health (covariate-adjusted incidence rate ratio: 1.30, 95 % CI: 1.16-1.46). All types of organisational changes were predictors of the incidence of poor self-rated health. There was a linear trend between the number of changes and the incidence of poor self-rated health. Mismanagement of changes increased the incidence still further. Psychosocial work factors had a mediating effect of 18.4-51.8 % in the associations between organisational changes and the incidence of poor self-rated health. The most contributing factors were those related to quantitative demands, role stressors, job insecurity, and internal violence.

Conclusions: Prevention oriented towards organisational changes may be useful to improve psychosocial working conditions and health among working populations.

Neidhammer et al. 2025.

Public Health, vol. 242.

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Keywords: Downsizing; health; job stress; organisational change; psychosocial work factors; restructuring; working population.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0033350625001428?via%3Dihub>

Fostering work participation

Return to work

What do employers need when supporting stroke survivors to return to work?: A mixed-methods study

Background: Employers are key in supporting stroke survivors to return to work (RTW) but do not always have knowledge/skills or guidance to do so. **Objectives:** To explore employers' needs for provision of post-stroke RTW support. **Methods:** Mixed-methods study. Participants recruited through voluntary response/purposive sampling. Survey of employers investigated stroke knowledge (maximum score: 7), RTW process knowledge (maximum score: 8), and perceived competency for actions supporting RTW (maximum score: 100%). Regression analyses explored relationships between employers' demographic/contextual characteristics and knowledge and perceived competency scores. Interviews with employers explored factors influencing their post-stroke RTW support. Interview data were analyzed using a framework analysis. Survey/interview findings were synthesized with those from a qualitative systematic review. **Results:** Across the survey ($n = 50$), interviews ($n = 7$), and review (25 studies), employers' support was influenced by stroke survivors' decisions to disclose stroke-related limitations, employers' knowledge regarding roles/responsibilities, employers' communication skills, and information provided by healthcare. Regression analyses: Human resources/occupational health support was positively associated with stroke knowledge ($\beta = 2.30$, 95% CI 0.36-4.41, $p = 0.013$) and RTW process knowledge ($\beta = 5.12$, 95% CI 1.80-6.87, $p = 0.001$). Post-stroke RTW experience was positively associated with stroke knowledge ($\beta = 1.36$, 95% CI 0.46-2.26, $p = 0.004$) and perceived competency ($\beta = 31.13$, 95% CI 18.40-44.76, $p = 0.001$). Organization size (i.e. working in a larger organization) was positively associated with RTW process knowledge ($\beta = 2.96$, 95% CI 1.52-4.36, $p = <.001$). **Conclusions:** Employers' RTW support was influenced by personal and environmental factors; they may benefit from education and guidance on stroke and their roles/responsibilities during the RTW process. **Keywords:** Mixed methods; employment; return-to-work; stroke; vocational rehabilitation.

Craven et al. 2025.

Topics in Stroke Rehabilitation, vol. 32, no. 4.

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Keywords: Mixed methods; employment; return-to-work; stroke; vocational rehabilitation.

Evidence Level: 5B

Link: <https://pubmed.ncbi.nlm.nih.gov/39364633/>

Self-perceived barriers to returning to work among employees with a low educational level on long-term sick leave: The "NOW WHAT" large-scale interview study

Objective: Because employees with low educational levels have the highest rates of sick leave, this study aimed to identify the self-perceived return-to-work barriers of employees with low educational levels on long-term sick leave. **Methods:** Employees on long-term sick leave with primary/secondary educational attainment were included from the NOW WHAT large-scale interview study ($n = 122$). The World Health Organization's system of classifying functioning, disability, and health guided the deductive content analysis. **Results:** 1,942 meaning units describing return-to-work barriers across all classifications were

identified. The most frequent components were body functions (n = 552, 28%, mean = 4.5), with mental functions (e.g., sleep, tiredness, emotional and cognitive functioning) the most frequent barriers; environmental factors (n = 414, 21%, mean = 3.4), with services, systems, and policies (e.g., social security, healthcare system) the most prevalent barriers; activity limitations (n = 352, 18%, mean = 2.9); and personal factors (n = 323, 17%, mean = 2.6). **Conclusion:** Employees with low educational levels on long-term sick leave described a wide range of return-to-work barriers and combinations thereof. In addition to health-related functional barriers, identifying environmental, activity-limitation, and personal barriers is important to enhance understanding of this group's potential determinants of absence from work.

Lervik et al. 2025.

Journal of Rehabilitation Medicine, vol. 57.

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Keywords: Barriers; sick leave; return to work.

Evidence Level: 4B

Link: <https://medicaljournalssweden.se/jrm/article/view/40604>

Using dialogue to address jurisdictional inequities in access to return to work resources and identify policy weaknesses for workers in situations of vulnerability

In Canada, occupational health and safety (OHS) and workers' compensation are primarily provincial responsibilities and there is no national institute for OHS research. Research capacity and many civil society resources to which injured workers can turn for support are primarily concentrated in three provinces. Labor force composition, employment options, vulnerability to injury, and return to work (RTW) challenges vary across jurisdictions and are changing over time, but not at the same rate. When coupled with jurisdictional inequities in RTW research and civil society supports, these differences have the potential to contribute to policy gaps and situations where issues addressed in one jurisdiction emerge again in another. This article reports on a multi-stakeholder, virtual dialogue process designed to help identify and address these potential inequities by transferring research insights related to RTW for workers in situations of vulnerability (e.g., precarious employment) and findings from a comparative policy scan to Newfoundland and Labrador (NL), a province with very limited RTW research capacity and civil society supports for injured workers. We describe the context, the dialogue process, key results from the policy scan, and we reflect on the opportunities and constraints of these knowledge synthesis and exchange tools as vehicles to address jurisdictional disparities in RTW research, policy and supports for workers injured in precarious employment and other vulnerable situations in a context of economic and policy change.

Keefe et al. 2025.

New Solutions: A Journal of Environmental and Occupational Health Policy, vol. 35, no. 1.

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Keywords: Knowledge synthesis and transfer; occupational safety and health; policy change; precarious employment; regional disparities; return to work; workers' compensation.

Evidence Level: 5B

Link: <https://journals.sagepub.com/doi/full/10.1177/10482911251319005>

Predictors of return to work after multidisciplinary rehabilitation program for patients with chronic low back pain

Introduction: Patients with chronic low back pain face functional, psychological, social and professional difficulties. Multidisciplinary rehabilitation programs (MRP) can be an effective treatment to help these patients to improve their condition and return to work. **Objective:** To determine baseline predictors for return to work after an MRP for patients with chronic low back pain struggling to maintain their job.

Methods: A monocentric cohort study was conducted. Patients who had followed a MRP between January

2015 and December 2020 were included. The program consisted of physical activities and different workshops inspired by behavioural therapy, at full time during one month. Pain, lifestyle, history of the disease, function, psychosocial characteristics were evaluated at baseline. Return to work at different possible time point after the MRP was collected. A bivariate and a multivariate analysis were performed to evaluate which factors were associated with return to work. **Results:** Overall, 251 patients were included. Professional status, duration off work, intensity of low back pain, self-perceived disability, fear-avoidance beliefs at work were associated with return to work after the MRP on bivariate analysis. Having worked in the past 6 months and the absence of high fear-avoidance beliefs at work at baseline were associated with return to work on multivariate analysis. **Discussion:** This study suggests that patients with chronic low back pain and professional difficulties need to be included quickly in a MRP, with specific attention to beliefs about pain.

Le Cam et al. 2025.

Joint Bone Spine, vol. 92, no. 3.

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Keywords: Chronic low back pain; multidisciplinary rehabilitation program; prognosis; return to work.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S1297319X24001519?via%3Dihub>

Analysis of primary referral patterns and return to work in patients with incident back pain due to lumbar disc herniation

Objective: To examine primary referral patterns and return to work in patients with incident back pain due to Lumbar Disc Herniation (LDH). **Methods:** Nationwide register-based cohort study including all Danish residents aged 18-65 who were referred from primary to specialized healthcare in 2017 with incident back pain and subsequently received a diagnosis of lumbar disc herniation (LDH), defined by ICD-10 codes DM51X.X. Patients were identified using the Danish National Patient Registry (DNPR), including both those directly diagnosed with LDH and those who initially received a diagnosis of nonspecific low back pain (ICD-10: DM54) that progressed to LDH within one year. Demographic data were obtained from the Danish Civil Registration System (CRS), and work capacity outcomes were assessed over a two-year follow-up using the Danish Register for Evaluation of Marginalization (DREAM). **Results:** A total of 30,082 persons, corresponding to 0.8% of the Danish population aged 18-65, were referred from primary health care to specialized health care with incident back pain and a final diagnosis of LDH. Of these, 5356 (17.8%) were referred to an emergency department, 14,628 (48.6%) to a medical department, and 10,098 (33.6%) to a surgical department. However, the admission rate and the initial department referred to varied widely between regions. Overall, 1915 (6.4%) underwent surgery. Surgical departments operated more frequently on patients with previous high (11%) or intermediate (14%) work capacity than on those with low work capacity (4%), although the latter were more often referred for surgical evaluation. Over 80% of patients with high or intermediate work capacity maintained or returned to work within a year. **Conclusion:** In Denmark, referral from primary to specialized health care of patients with incident back pain due to LDH varies considerable between regions highlighting the need for more standardized referral pathways. Specifically, ensuring a better balance between emergency, medical, and surgical referrals could reduce unnecessary emergency admissions and improve the precision of surgical referrals optimizing the use of surgical capacity and healthcare resources in general.

Kjeldgaard et al. 2025.

Acta Neurochirurgica, vol. 167, no. 1.

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Keywords: Back-pain; choose wisely; Denmark; lumbar disc herniation; national registry; return to work; work capacity.

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007/s00701-025-06546-z>

Return to work after injuries: Legal challenges for seafarers in Canada

Return to work (RTW) after injury requires strong stakeholder coordination. Seafaring work is associated with high injury rates, but seafarers' RTW is understudied. As federally regulated workers, Canadian seafarers are protected by the Canadian Human Rights Act, which prohibits discrimination based on disability. Following a work-related injury or illness, seafarers are eligible for provincial workers' compensation benefits and RTW; however, RTW is also subject to federal regulations, including the requirement to have a valid marine medical certificate (MMC). This complex regulatory landscape may negatively influence seafarer RTW. Drawing upon a sociolegal study, we find that MMC-related human rights complaints against the federal government highlight the legal challenges seafarers face in the RTW process. Interview findings suggest that to ensure a valid MMC and employment eligibility, injured seafarers might avoid filing compensation claims or RTW before recovery. We recommend the federal-provincial agencies adopt more efficient coordination policies to support seafarers' RTW.

Shan et al. 2025. <https://pubmed.ncbi.nlm.nih.gov/40007146/>

NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy, vol. 35, no. 1.

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Keywords: Legal challenges; marine medical certificates; return to work; seafarers.

Evidence Level: 4B

Link: <https://pubmed.ncbi.nlm.nih.gov/40007146/>

Injury and return to work among maritime workers in British Columbia, Canada

Maritime occupations encompass seafaring, fishing, marine aquaculture, and longshore work. These non-standard occupations tend to be hazardous with high injury rates. They are associated with varying levels of seasonality, shift work, geographic mobility, and different types of remuneration, posing unique challenges when recovering from work-related injury and illness. Occupational health and safety is under-researched in these sectors. Furthermore, little research exists on return to work (RTW) after injury among maritime workers. This paper presents findings from a mixed methods research program designed to provide insight into injury, compensation and RTW experiences among maritime workers in the Canadian province of British Columbia (BC). Research methods include the analysis of provincial workers' compensation data, data from an anonymous online survey of injured/ill BC maritime workers and from semi-structured interviews with injured workers and key informants. Analysis of workers' compensation data shows high rates of serious injuries, longer disability duration, and high rates of deemed RTW, particularly in fishing. Survey findings suggest a relatively low percentage of workers file claims for workers' compensation to WorkSafeBC. Interview data highlights some of the challenges that may explain under-reporting, longer disability duration, and relatively poor RTW outcomes. Policy relevant concerns and areas for future research relevant to understanding and addressing some of the identified RTW challenges associated with these sectors are presented.

Neis et al. 2025.

NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy, vol. 35, no. 1.

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Keywords: British Columbia; Canada; maritime workers; occupational health; return to work.

Evidence Level: 4B

Link: <https://pubmed.ncbi.nlm.nih.gov/40033893/>

Presenteeism and absenteeism

Trajectories of sickness absence and disability pension in young working-age adults in Sweden

Sickness absence and disability pension (SADP) constitute a major public health concern, yet the heterogeneity in the developmental trajectories of SADP remains poorly understood. We aimed to identify trajectories of SADP in an observational cohort study of 12,721 Swedish twin individuals, born 1975-1986, who were initially invited to health screening surveys in 2005. Through linkage to nationwide registries, individuals were prospectively followed regarding annual days of SADP from 2006 to 2020. Using group-based trajectory modeling, we identified three distinct SADP trajectories in the total sample: 'high-increasing' (4%), 'low-increasing' (13%), and 'low-constant' (83%). Next, using multinomial logistic regression, we found that mental health-related factors such as neurodevelopmental conditions and common mental disorders were strongly associated with the high-increasing and low-increasing SADP trajectories. Furthermore, increasing age, female sex, low/medium educational level, and blue-collar work were found to be associated with higher odds of belonging to the high-increasing and low-increasing SADP trajectories. We did not find any effect of genetic similarity. Overall, close to every fifth individual showed rising SADP trajectories over time. Research is warranted to address the specific support needs of vulnerable young people struggling with mental health conditions, and to identify any actionable barriers to facilitate labor market integration.

Alaie et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Sickness absence; disability pension; working age.

Evidence Level: 4A

Link: <https://www.nature.com/articles/s41598-025-03739-5>

Legitimizing incapacity: Discursive choices in Norwegian sickness certificates

Background: In Norway's welfare system, General Practitioners (GPs) issue sickness certificates (SCs) to document patient's inability to work. These documents serve a dual role as medical evidence and as a basis for social welfare decisions. The language used in SCs can shape how non-medical stakeholders perceive a patient's work capacity. This study examines how SC language constructs narratives of work ability, focusing on how it portrays patients' limitations and prospects for recovery. **Methods:** We conducted a qualitative discourse analysis of 155 SCs written by Norwegian GPs for patients under 35 years old with common mental health conditions. We focused on certificates issued around week 39 of the patient's sick leave. Using discourse analysis techniques, we examined linguistic features that convey the patient's work capacity and functional limitations. **Results:** SCs predominantly emphasized incapacity and the necessity of work absence through discursive choices such as definitive language, amplified descriptions, and rhetorical strategies reinforcing limitations. Recovery potential was presented with tentative language, reflecting uncertainty in prognosis, while the temporal dimension of treatment was frequently framed as a barrier to returning to work. Additionally, the use of specialized terminology, generalized label, and elliptical constructions placed a significant interpretative burden on non-medical readers. Furthermore, SCs largely lacked explicit recommendations for workplace accommodations or interdisciplinary collaboration, limiting their utility in facilitating structured return-to-work strategies. **Conclusions:** Time constraints, administrative pressures, and the dual roles of GPs as clinicians and bureaucrats shape the entire production of SCs. In turn, these discursive choices often reinforce narratives of incapacity. Enhancing SC relevance through structural modifications and interdisciplinary collaboration, including employer involvement in evaluating workplace accommodations, could improve welfare assessments and support tailored reintegration strategies. Positioning SCs as collaborative tools - rather than standalone assessments - may better align clinical evaluations with workplace realities and foster shared accountability for recovery and return-to-work efforts. SCs seem to place a disproportionate burden on GPs to translate

medical conditions into work-related recommendations, often without the support or expertise required for such interdisciplinary evaluations.

D'Angelo et al. 2025.

BMC Health Services Research, vol. 25, no. 1.

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Keywords: Discourse analysis; general practitioners; mental health; norway; patient work ability; sickness certificates; welfare assessments.

Evidence Level: 5B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-025-12902-7>

Effective interventions to reduce sick leave in workers with mental illnesses: A systematic review of randomized controlled trials

Objective: Effective interventions to reduce sick leave in people with mental illnesses remain unknown.

This systematic review of randomized controlled trials (RCTs) assessed the impact of various interventions on reducing sick leave among individuals with mental illnesses. **Methods:** We conducted searches in PubMed, Cochrane Library, and PsycINFO until February 2024 and included RCTs with parallel designs. Two reviewers assessed the quality of trials using the Cochrane risk of bias tool (ROB-2). **Results:** Out of 5109 publications, 75 RCTs were included. Ten RCTs with no serious risk of bias demonstrated that certain interventions could reduce sick leave. Interventions based on cognitive behavioural therapy and problem-solving therapy reduced sick leave within a year, but the effect was not long-lasting. Enhanced care approaches, where physicians and care managers encouraged patients to start and maintain pharmacotherapy or psychotherapy, also decreased absenteeism. Online cognitive behavioural therapy yielded a modest decrease in absenteeism. An intervention involving both employees and supervisors to modify the workplace and address stress reduced long-term sick leave. Involving employees in stressor management initiatives decreased sick leave, and a combination of work-focused and online cognitive behavioural therapy reduced short-term sick leave but did not affect long-term (≥ 15 days) rates. Group therapy led by a clinical psychologist for stress management also showed benefits in the short term (3 months). **Conclusion:** Multifaceted approaches that combine individual therapy and workplace adjustments are more effective in managing sick leave for individuals with mental illnesses than either approach alone.

Shiri et al. 2025.

Journal of Psychosomatic Research, vol. 193.

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Keywords: Absenteeism; anxiety; depression; mental disorders; occupational stress.

Evidence Level: 1A

Link: <https://www.sciencedirect.com/science/article/pii/S0022399925001047?via%3Dihub>

Health consequences of graded, full, and no sickness absence among workers with musculoskeletal disorders: Health profiles and six-months symptom changes of patients referred to Norwegian outpatient clinics for chronic neck and back pain

Objective: It is generally assumed that graded sickness absence results in favourable health effects due to observed positive consequences of maintaining work participation. To date, however, the direct health benefits of graded sick leave have not been widely explored. Musculoskeletal disorders are among the most prominent health issues resulting in work incapacities. This study examined baseline characteristics and six-months pain-related disability and health-related life quality progression of working age adults who attended a neck and back pain outpatient clinic. Patients prescribed graded sick leave were compared to patients prescribed full sick leave and those working without sick leave. **Methods:** Demographic, health, and treatment information of patients were assessed using clinician and patient self-report questionnaire data collected at neck and back pain outpatient clinics between 2016 and 2022. Data were obtained from the Norwegian Neck and Back Registry and the Norwegian Labour and Welfare Administration. Patient

characteristics in the two weeks leading up to clinic intake were described. General linear models for repeated measures were employed to observe six-months changes in pain-related disability and health-related life quality. **Results:** A total of 5143 (54% female, M = 44.70 years, SD = 11.50) patients were prescribed full (n = 1411, 27%), graded (n = 1164, 23%), and no (n = 2568, 50%) sickness absence. Patients prescribed graded sick leave reported lower baseline levels of pain-related disability compared to those on full sick leave but higher pain-related disability than patients without sick leave. There were significant main and interaction effects of time and sickness absence, whereby reductions in pain-related disability were greatest among patients prescribed full sick leave, however, this group reported the highest levels of pain-related disability and lowest life quality prior to their clinic intake and six months later. **Conclusion:** Patients who were prescribed full, graded, or no sick leave exhibited significant, albeit not clinically meaningful, reductions in pain-related disability over a six-months period. Symptom reductions may be due to clinician support or remission trends in line with regression towards the mean. While no superior health effects of graded sick leave were noted, work participation did not appear to have detrimental health effects.

Sanatkar et al. 2025.

BMC Musculoskeletal Disorders, vol. 26, no. 1.

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Keywords: Health service utilisation; musculoskeletal disorder; neck and back pain; quality of life; sickness absence.

Evidence Level: 4B

Link: <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-025-08570-7>

Line manager perspectives on workplace-based efforts to reduce sickness absence: A qualitative study

Introduction: The purpose of this study is to examine line manager perspectives on two workplace-based efforts to reduce sickness absence (uniform procedures for managing sickness absence and initiating preventive actions), two components from an intervention to reduce sickness absence in public sector workplaces in Denmark. **Methods:** We performed 19 semi-structured interviews with line managers from four public sector workplaces. The interviews were analysed using thematic analysis (TA). Normalization Process Theory (NPT) was used as theoretical framework. **Results:** Uniform sickness absence procedures are meaningful and provide clear expectations for line managers and employees about roles and responsibilities during sick leave. Line managers expressed a desire for flexibility in adjusting the procedures to the individual needs of the employees. They also reported a need for proactive preventive actions that prevent sickness absence from occurring in the first place. The line managers reported lacking competencies to ensure appropriate sick leave management and that their own well-being was often overlooked. **Conclusion:** Future interventions should focus on improving the work environment instead of focusing solely on absenteeism. It is essential to consider the well-being of the line managers and provide adequate training, as this can affect their capability to ensure the well-being of, and reduce sickness absence, among their employees.

Rasmussen et al. 2025.

International Journal of Qualitative Studies on Health and Well-being, vol. 20, no. 1.

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Keywords: Absenteeism; line manager; normalization process theory; sick leave; sickness absence intervention; workplace.

Evidence Level: 5B

Link: <https://pubmed.ncbi.nlm.nih.gov/40445040/>

Association between andropause symptoms and work functioning impairment: A cross-sectional study in two Japanese companies

The study aimed to assess the relationship between andropause, or male menopause, and work functioning in aging Japanese male workers. A cross-sectional study was conducted on 561 male employees from two Japanese companies. We measured andropause symptoms using the Aging Male's Symptoms (AMS) scale, and work functioning impairment using the Work Functioning Impairment Scale (WFun). The data were analyzed using Poisson regression with robust variance to estimate the relationship between andropause severity and work functioning impairment. The findings indicated a significant association between severe symptoms of andropause and increased work functioning impairment among male workers. Higher AMS scores, reflecting more severe symptoms, correlated with greater work functioning impairment, particularly with regard to physical and psychological health issues, such as muscle weakness and depressive symptoms. This study highlights the need for workplace health programs that include middle-aged and older male workers to address and manage symptoms of andropause. Further, it emphasizes the importance of recognizing andropause as a significant health issue that can adversely affect work performance and productivity. Future studies should incorporate the measurement of testosterone to ensure the more accurate assessment of andropause and its impact on work functioning.

Okawara et al. 2025.

Industrial Health, vol. 63, no. 3.

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Keywords: Japan; Late-onset hypogonadism (LOH) syndrome; male menopause; observational study; presenteeism.

Evidence Level: 4B

Link: https://www.jstage.jst.go.jp/article/indhealth/63/3/63_2024-0168/article

Workers compensation

Early high-risk opioid prescribing and persistent opioid use in Australian workers with Workers' Compensation Claims for back and neck musculoskeletal disorders or injuries: A retrospective cohort study

Background: Opioid prescribing to injured workers has increased despite evidence demonstrating that risks often outweigh the benefits. High-risk prescribing and persistent opioid use are often associated with harm. However, there are limited data on what predicts early high-risk and persistent opioid prescribing in Australian workers with back and neck-related injuries or disorders. **Objective:** The purpose of this study was to determine the prevalence and identify determinants of early high-risk and persistent opioid prescribing in Australian workers with back and neck conditions. **Methods:** A retrospective cohort study was carried out with injured workers with workers' compensation claims for back and neck conditions who filled at least one opioid prescription within the first 90 days after injury from 1 January 2010 to 31 December 2019. High-risk opioid prescribing practices in the first 90 days were measured using one of four indicators of risk (high-total opioid volume on first dispensing occasion-exceeding 350 mg oral morphine equivalent in the first week, average high-dose over 90 days-higher than 50 mg oral morphine equivalent, early supply with long-acting opioids, and concurrent psychotropic prescriptions). Persistent opioid use was determined using group-based trajectory modeling over the subsequent 1-year. Multivariable logistic regression was used to identify predictors of high-risk opioid prescribing in the first 90 days and persistent opioid use in the subsequent year. **Results:** A total of 6278 injured workers prescribed opioids were included. At least one indicator of high-risk opioid prescribing was identified in 67.1% of the sample in the first 3 months. Persistent opioid use was identified in 22.8% of the sample over the subsequent year. Early high-risk opioid prescribing was associated with double the odds of persistent use (aOR 2.19, 95% CI 1.89-2.53). Injured workers residing in rural areas (inner regional and outer regional/remote Australia) had

higher odds of high-risk prescribing (aOR 1.26, 95% CI 1.11-1.44) and (aOR 1.43, 95% CI 1.10-1.87), respectively, compared with those in major cities. Similarly, workers residing in areas with most disadvantaged and advantaged socioeconomic quintile had higher (aOR 1.18, 95% CI 1.01-1.39) and lower (aOR 0.68, 95% CI 0.56-0.82) odds of persistent opioid use, respectively, compared with those in the middle socioeconomic quintiles. **Conclusions:** A total of two-thirds of injured workers receiving opioids in the first 90 days show evidence of high-risk prescribing, with nearly one-quarter exhibiting persistent opioid use over the subsequent year. Early high-risk opioid prescribing doubles the odds of opioid persistence. There is a need for further research and careful scrutiny of opioid prescribing in this population.

Tefera et al. 2025.

CNS Drugs, vol. 39, no. 5.

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Keywords: Opioids; opioids use; workers compensation; back injury; neck injury; musculoskeletal disorders.

Evidence Level: 4A

Link: <https://link.springer.com/article/10.1007/s40263-025-01169-5>

Working hours

Long working hours at midlife and arterial stiffness at older age in a 24-year prospective cohort

Backgrounds: This study aims to examine whether long working hours, repeatedly assessed at midlife, is associated with higher arterial stiffness at older age in a 24-year prospective study of white-collar workers in Quebec City, Canada. **Methods:** This study relied on a prospective cohort, initiated in 1991-1993 (T1) with two follow-ups after 8 years (T2, 1999-2001) and 24 years (T3, 2015-2018). Participants (N = 1,629, 51.3% women, mean age 37 ± 6.4 at T1) were randomly selected for arterial stiffness measurement at T3 using carotid-femoral pulse wave velocity (PWV). Long working hours (> 40 h/week) were assessed at T1 and T2. Mean differences in PWV were estimated using generalized linear models, accounting for sociodemographic factors, lifestyle-related risk factors, clinical factors and psychosocial stressors at work.

Results: Among participants who remained actively employed over the study period (age range: 21-59 at T1), long working hours at T1 were associated with a + 0.54 m/s (95% CI: 0.05; 1.02) increase in PWV, while repeated exposure at T1 and T2 was associated with a + 1.50 m/s (95% CI: 0.78; 2.21) increase. No association was observed among participants who retired between T2 and T3. **Conclusion:** The present study suggests that exposure to long working hours during midlife is associated with higher arterial stiffness, among aging workers. Workplace preventive strategies reducing long working hours may be effective to mitigate long-term arterial stiffening.

Sisti et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Arterial stiffness; cardiovascular disease; occupational stress; work environment.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-22954-3>

Wellness programs

Enhancing workplace wellness: The impact of multidisciplinary interventions on employee health and productivity

Background: Healthy lifestyles play an important role in speaking about the onset of chronic diseases; sedentary work and bad habits can worsen workers' health, eventually affecting productivity. Some companies have increasingly invested in workplace wellness programs to improve workers' health and decrease health care costs. This study describes a pilot experience on the advantages of the introduction

wellness interventions in workplace . **Methods:** From April 2022 to April 2023, 70 employees in multiple working roles have been selected (on volunteer base) for a training protocol. A questionnaire was used, analyzing the 5 aspects before and after training program: kinesiology, physiotherapy, psychology, nutrition, science of happiness. **Results:** Participants who did not carry out intense physical activity on a weekly basis drastically decreased from 56% to 34.5%. No cases with persistent pain, compared to 10.4% previously recorded. Participants eating, more than once a day, packaged industrial foods were eliminated. Participants in "good mood" increased from 11.9% to 31% and who feels positive emotions increased from 35.8% to 55.2%. **Conclusions:** Results show the benefit of the multidisciplinary approach and the strong impact between the training days and clear improvements in both aspects of working life and personal aspects. A strategy aiming and increasing the stakeholder's awareness in changing behavior and promoting the culture of prevention is recommended. It is possible to hope to export and experiment with this method in more extensive corporate contexts, in order to make it applicable on a larger scale.

Noviello et al. 2025.

The Journal of Sport Medicine and Physical Fitness, vol. 65, no. 5.

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Keywords: Wellness; employee health; productivity; interventions.

Evidence Level: 5B

Link: <https://www.minervamedica.it/en/journals/sports-med-physical-fitness/article.php?cod=R40Y2025N05A0673>

Naturalistic evaluation of HeadGear: A smartphone app to reduce depressive symptoms in workers

Mobile health (mHealth) apps have the potential to expand access to evidence-based interventions for mental health conditions, including depression. HeadGear was developed to prevent depression and improve well-being among the working population and was associated with significant positive effects in an efficacy trial. This study presents the results from a naturalistic trial intended to evaluate real-world usage of the app. We examined the naturalistic use of HeadGear between March 2019 and March 2022, using app analytic data, in-app event data, and surveys assessing depressive symptoms, well-being, and work performance repeated at 30-day intervals over 5-month app usage. During the observation period, HeadGear was widely disseminated to the public, and downloaded 26,455 times. Of those who downloaded the app, 12,995 completed baseline. The mean age of users was 38.23 (SD = 12.39) and 60% were women. Approximately one in four met criteria for probable depression at baseline. Depressive symptoms showed consistent improvement at all time points (Cohen's d ranging from 0.24 at 1 month to 0.13 at 5 months). A similar pattern emerged for well-being. Work performance showed improvement to 2-month follow-up only. The strongest change was found for those with greater symptom severity at baseline, and those with high app engagement. Attrition at follow-up points was high. Findings regarding the real-world use of HeadGear are promising and highlight the use of such apps among those with higher symptom severity (despite the intended use of the app as a prevention tool). Further work is required to tailor mHealth apps to reach their full potential through an enhanced understanding of the utility of individual features for effectiveness and engagement.

Deady et al. 2025.

Behavior Therapy, vol. 56, no. 3.

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Keywords: Depression; eHealth; mHealth; naturalistic; smartphone app; well-being.

Evidence Level: 4A

Link: <https://www.sciencedirect.com/science/article/pii/S0005789424000017?via%3Dihub>

Factors for adherence to a physical activity promotion program in the workplace: A systematic review

Introduction: The health benefits of physical activity (PA) are now widely accepted and proven. Promoting PA in the workplace is therefore of major public health interest, but is limited by employees' adherence.

Method: A systematic review was therefore carried out to identify factors for adherence to PA promotion program in the workplace (primary outcome); health outcomes were to be regarded as secondary outcomes. Four databases, PubMed, Web of Science, Cochrane Central Register of Controlled Trials (Cochrane CRCTs) and PsycInfo were searched to find all pertinent articles published from 2000 until June 2024. Only randomized controlled trials (RCTs) and clinical trials were selected. **Results:** More than 9000 publications were analyzed and 91 were retrieved. Two main types of study were identified: 46 non-supervised PA programs (NSPAPs) supported by socio-cognitive theories, and 45 supervised (tailored) programs (SPAPs). Concerning the primary outcome, the main factors identified for adherence were the levels of baseline PA, health and motivation of the individual; intervention individualization at the interventional level; and work environment quality at the organizational level. This review highlighted significant health benefits in both types of study, with effect sizes ranging from small to large. **Discussion:** Assessing these factors for adherence emerges as an essential prerequisite before implementing a PA promotion program in the workplace. According to our results, implementing NSPAPs, supported by socio-cognitive theories, is rather complex, and such programs can be difficult to operationalize in their entirety; consequently, coach-supervised PAPs based on RCT programs tend to be more effective. **Conclusion:** Our results prove the short and medium-term beneficial effect on health of PAP in the workplace based on rigorous methodology such as RCTs. Management's support through work organization and the follow-up of actions in the long term are an essential factor for adherence to these programs. Finally, we suggest what this literature review contributes for future research or entrepreneurial and/or political projects. In fine, new models of working time will have to be considered.

Grimaud et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Cognitive; health; management; physical activity; social; workplace.

Evidence Level: 1A

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-22775-4>

Effectiveness and implementation outcomes of an mhealth app aimed at promoting physical activity and improving psychological distress in the workplace setting: Cluster-level nonrandomized controlled trial

Background: Encouraging physical activity improves mental health and is recommended in workplace mental health guidelines. Although mobile health (mHealth) interventions are promising for physical activity promotion, their impact on mental health outcomes is inconsistent. Furthermore, poor user retention rates of mHealth apps pose a major challenge. **Objective:** This study aimed to examine the effectiveness and implementation outcomes of the smartphone app ASHARE in Japanese workplace settings, leveraging a deep learning model to monitor depression and anxiety through physical activity.

Methods: This hybrid effectiveness-implementation trial was a 3-month nonrandomized controlled trial conducted from October 2023 to September 2024. Work units and employees were recruited and allocated to the intervention or active control group based on preference. The intervention group installed the ASHARE app, whereas the control group participated in an existing multicomponent workplace program promoting physical activity. Changes in physical activity and psychological distress levels were compared between the groups. User retention rates, participation rates, acceptability, appropriateness, feasibility, satisfaction, and potential harm were also assessed. **Results:** A total of 84 employees from 7 work units participated (67 from 5 units in the intervention group and 17 from 2 units in the control group). In total, 78 employees completed the 3-month follow-up survey (follow-up rate: 93%). Both groups showed increased physical activity, and the intervention group showed reduced psychological distress; however, the differences between groups were not statistically significant ($P=.20$; $P=.36$). In a sensitivity analysis of

protocol-compliant employees (n=21), psychological distress levels were significantly reduced in the intervention group compared with the control group (coefficient=-3.68, SE 1.65; P=.03). The app's 3-month user retention rate was 20% (12/61), which was lower than the participation rate in each component of the control programs. Implementation outcomes evaluated by employees were less favorable in the intervention group than in the control group, whereas health promotion managers found them to be similar. **Conclusions:** The ASHARE app did not show superior effectiveness compared with an existing multicomponent workplace program for promoting physical activity. An implementation gap may exist between health promotion managers and employees, possibly contributing to the app's low user retention rate. Future research should focus on examining the effectiveness of strategies to get engagement from managers and from segments of employees with favorable responses in the workplace at an early stage.

Watanabe et al. 2025.

JMIR Mhealth Uhealth, vol. 13.

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Keywords: Anxiety; behavioral change; depression; eHealth; mobile phone; smartphone; workplace.

Evidence Level: 3B

Link: <https://mhealth.jmir.org/2025/1/e70473>

Organisational issues

Stress among police officials in Kerala, India: An analysis of organizational and operational factors

Background: Globally, the rising concern regarding the stress experienced by police officials poses a significant challenge. However, there is limited research on this issue in low- and middle-income countries like India. The present study examines the specific stressors associated with the operational demands and organizational structures experienced by police officers in the state of Kerala, India. **Methods:** A survey was conducted among police officials working in randomly selected police stations located in the Thiruvananthapuram district, Kerala. We used the level of occupational and organizational stress using the police stress questionnaire. Both bivariate and multivariate logistic regression analyses were employed to determine the factors that were associated with higher stress levels. **Results:** The findings indicated that 75.5% of participants experienced high operational stress and 65.6% experienced high organizational stress. Age was significantly associated with operational stress, with participants in the higher age group reporting higher levels of stress (odds ratio (OR): 2.20, 95% confidence interval (CI): 1.05-4.59). Participants with lower physical activity levels had a higher likelihood of experiencing operational stress (OR: 7.07; CI: 2.85-17.50) and organizational stress (OR: 2.77, 95% CI: 1.38-5.59) compared to their more active counterparts. The use of alcohol or tobacco was found to be the highest associated factor with operational (OR: 14.58, CI: 4.19-50.7) and organizational stress (OR: 27.45, CI: 8.01-94.03). Having diabetes or hypertension was also significantly associated with a high level of operational stress (OR: 2.97, CI: 1.32-6.60) and organizational stress (OR: 4.16; CI: 2.02-8.57). **Conclusions:** The study highlights factors associated with higher stress levels, including physical inactivity, alcohol or tobacco use, and morbidity, that require targeted interventions to enhance the mental and physical health of police officers. Based on the findings of the study, the researchers propose suitable intervention programs in this population. Further, the findings suggest that the police departments may consider providing better stress-management skills, mental health resources, and flexible work arrangements to manage stress.

Gk et al. 2025.

BMC Psychology, vol. 13, no. 1.

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Keywords: India; Kerala; operational stress; organizational stress; police officials; police stress.

Evidence Level: 5B

Link: <https://bmcp psychology.biomedcentral.com/articles/10.1186/s40359-025-02831-9>

Impaired responses to in vitro lipopolysaccharide-induced stimulation after long-term, rotating shift work

Shift work is a common labor practice affecting nearly 30% of the U.S. workforce. Long-term, rotating-shift work is particularly harmful to health. Persistent sleep deprivation in shift workers, among other factors, facilitates the development of a state of subclinical but chronic systemic inflammation with a high incidence and prevalence of infections and inflammation-related pathologies, suggesting an underlying disruption of immune responses. However, despite this state of chronic immune activation, cell-mediated inflammatory responses in rotating-shift workers are poorly understood. Here, we used lipopolysaccharide (LPS) to stimulate peripheral blood mononuclear cells (PBMCs) isolated from rotating-shift workers and healthy day-shift workers and investigate their immune responses. The results showed that PBMCs from rotating-shift workers had a dampened inflammatory response. Specifically, the secretion of LPS-induced TNF- α in culture supernatants was significantly reduced compared to the response found in PBMCs from day-shift workers. However, anti-inflammatory responses, reflected by the secretion of LPS-induced IL-10, were indistinguishable between PBMCs from day-shift and rotating-shift workers. In addition, the correlation between the plasma concentration of lipopolysaccharide-binding protein (LBP, a marker of systemic inflammation) and LPS-induced responses was disrupted only in rotating-shift workers, suggesting that in this group, an impaired mechanism that weakens the relationship between pro- and anti-inflammatory signaling may underlie the hypo-responsiveness of PBMCs. Our results suggest that persistent subclinical systemic inflammation in rotating-shift workers disrupts cell-mediated immunity, increasing the risk of infection and other inflammation-related pathologies in this population.

Jackson et al. 2025.

Industrial Journal of Environmental Research and Public Health, vol. 22, no. 5.

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Keywords: LPS response; chronic systemic inflammation; lipopolysaccharide; long-term shift work; rotating schedules.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/22/5/791>

Combined exposure to night work and noise in relation to hyperglycemia among long-term night workers: A nationwide population-based prospective cohort study

Objectives: This study investigated the association between combined exposures and hyperglycemia incidence, as well as the dose-response relationship between the duration of night work and hyperglycemia among long-term night workers. **Methods:** In this prospective cohort study, 12 716 night workers from the nationwide population were recruited. Hyperglycemia incidence was based on the one-year change in fasting blood glucose levels. Occupational noise exposure was defined as exposure to 8-hour time-weighted average sound levels of ≥ 85 decibels. Personal factors, including body mass index, and work-related factors, like monthly night work duration, were assessed. Multivariable logistic and linear regression models were used to explore the association. **Results:** In the multivariate logistic analyses, each additional day of night work was associated with an increased risk of hyperglycemia [adjusted odds ratio 1.05, 95% confidence interval (CI) 1.02-1.07]. In the normal fasting glucose group, each additional day of night work was associated with a linear increase of +0.07% (95% CI +0.03% - +0.12%) in the change in fasting glucose levels, and noise exposure was associated with a linear increase of +1.34% (95% CI +0.55% - +2.12%) increase in fasting glucose levels. Furthermore, the population exposed to noise and working ≥ 10 days of night work had a significantly higher increase of fasting glucose levels (β +5.71%, 95% CI +4.48% - +6.95%), with significant interaction effects (P for interaction < 0.01). **Conclusions:** The possible dose-response relationship between duration of night work and changes in fasting glucose levels was found. The combined exposure to night work and noise posed a higher risk for hyperglycemia than exposure to night work alone.

Chu et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Exposure; night work; noise; hyperglycemia; night workers.

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/4215>

Management and Leadership

A social exchange perspective on supervisors' Dark Triad and subordinates' counterproductive work behaviors: Psychological contract fulfillment as a boundary condition

This study aims to examine the effects of supervisors' Dark Triad on subordinates' counterproductive work behaviors, differentiating between counterproductive work behaviors toward the organization and those toward individuals. Drawing from the social exchange perspective, psychological contract fulfillment is introduced as a boundary condition to mitigate these adverse effects. Data collected from China's banking sector largely supports the proposed theoretical framework and hypotheses. The findings revealed that all three dimensions of supervisors' Dark Triad—narcissism, psychopathy, and Machiavellianism—adversely influence subordinates' counterproductive work behaviors toward both the organization and individuals. Additionally, psychological contract fulfillment moderates the relationship between supervisors' Dark Triad and subordinates' counterproductive work behaviors toward the organization, buffering its adverse impact. However, no significant moderating effect was found for counterproductive work behaviors toward individuals.

Yu et al. 2025.

Acta Psychologica, vol. 256.

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Keywords: Counterproductive work behaviors; dark triad; machiavellianism; narcissism; psychological contract fulfillment; psychopathy

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S0001691825003671?via%3Dihub>

The impact of transformational leadership on the workplace well-being of employees with disabilities: Series mediation and moderation process

This paper investigates the impact of transformational leadership on workplace well-being for employees with disabilities through the integration of assistive technology (AT) and its influencing factors. Despite the growing recognition of the importance of inclusivity in the workplace, employees with disabilities frequently encounter barriers that can hinder their well-being and participation. This research examines how transformational leadership can shape the organizational context through the adoption, utilization, and effectiveness of AT in promoting employee well-being while also considering the impact of psychological factors. A questionnaire was employed to collect responses from 432 employees with disabilities. Based on the gathered data, Structural Equation Modeling (SEM) with SmartPLS was utilized to test the research hypotheses and produce results. The findings reveal that transformational leadership fosters a positive organizational context by nurturing a culture of inclusion and support with $\beta = 0.081$. This context promotes integrating assistive technology to enhance the well-being of disabled employees in the workplace. Additionally, the results confirm that transformational leadership encourages the development of psychological factors such as self-confidence and self-efficacy as key determinants of well-being, with $\beta = 0.435$. This paper contributes to the existing literature by providing a nuanced understanding of the relationship between transformational leadership, assistive technology, and the well-being of employees with disabilities. It offers comprehensive practical insights for organizations seeking to improve their inclusive practices and support employees with disabilities in achieving their full work potential.

Alfalih et al. 2025.

Frontiers in Public Health, vol. 13.

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Keywords: Assistive technology; culture; disability technology; employees with disabilities; organizational factors; personal factors; transformational leadership.

Evidence Level: 5B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1506257/full>

Is leader innovation a challenge or a burden for employees? The perspective of affective events

The importance of innovation has lit scholars' passion to figure out how to encourage innovative behavior, while its outcomes have been largely overlooked. Meanwhile, prior studies have focused on employees as the innovator and ignored that leaders are even more responsible to innovate. To understand employees' emotional and behavioral reactions to leader innovative behavior, this study drew on the affective events theory and regulatory focus theory and constructed a dual pathway model to illustrate the double-edge sword effects of leader innovation. We collected data from 219 full-time employees through three rounds of surveys and conducted statistical analysis and hypothesis testing using Mplus 8.3. The results revealed a significant positive effect of leader innovative behavior on employee work engagement through harmonious passion, which is moderated by employee promotion focus, such that the positive effect is stronger when promotion focus is higher. The results also indicated that leader innovative behavior is positively related to employee work withdrawal via job anxiety and prevention focus moderate the relationship, such that the positive effect is stronger when prevention focus is higher. This study reveals the double-edged sword effect of leader innovation on employee work behaviors from an affective event perspective, which provides theoretical and practical guidance for leaders and organizations in promoting the positive effect while reducing the negative effect of leader innovative behavior.

Zhang et al. 2025.

Acta Psychologica, vol. 256.

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Keywords: Affective events theory; leader innovative behavior; regulatory focus; work engagement; work withdrawal.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S0001691825003683?via%3Dihub>

Work ability

The gendered effect of rehabilitative psychotherapy use on income: Quasi-experimental evidence from a Finnish population with work disability due to common mental disorders

Background: With tightening healthcare budgets, assessing the economic impact of mental health treatments is crucial for informing policy measures. Sociodemographic factors, such as gender, are associated with these outcomes. We studied the gender-specific impact of long-term rehabilitative psychotherapy on the income of working-age individuals who had experienced sick leave due to common mental disorders (CMD). **Methods:** We analyzed register data from 2010 to 2019, covering a 33 % random sample of the Finnish working-age population (aged 18-55 in 2010). The sample included 32,558 individuals with their first compensated sickness absence for CMD during 2011-2015. Of these, 4592 (76.1 % women) began psychotherapy, the rest formed the control group. We used difference-in-differences regression with inverse probability weighting to estimate the average treatment effects on the treated (ATT) for women and men relative to the timing of treatment. **Results:** The average effect was negligible for women (ATT: 0.01, 95 % Confidence Interval: -0.03 - 0.06), while men experienced a substantial 27 % increase in income (ATT: 0.27, 95 % CI: 0.13-0.42). Event-study estimates indicated that the effect on men's income was

immediate and long-lasting. **Limitations:** Analysis of our findings is restricted to observed register-based covariates including work disability and employment status, and individual- and time-fixed effects.

Conclusions: Among those who had received compensated sick leave due to CMD, men experienced an immediate and long-lasting increase in income after undergoing psychotherapy, while no such effect was observed for women. Further research is needed to explore factors such as selection for treatment, occupational segregation, and treatment engagement among recipients.

Turunen et al. 2025.

Journal of Affective Disorders, vol. 377.

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Keywords: Common mental disorders; income; psychotherapy; work disability.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0165032725002654?via%3Dihub>

Adapting to the future of work

Ageing workforce

Retirement transition sequences and well-being among older workers focusing on gender differences

This study examines retirement transition patterns and well-being in later life, focusing on gender differences using data from the 2004-2016 Health and Retirement Study (HRS) with 1,653 older workers. Sequence analysis identifies key retirement patterns, showing that men predominantly transitioned from full-time to mid-time voluntary retirement, while women experienced more gradual involuntary retirement. Involuntary retirees, both men and women, had precarious work histories and poorer mental health. The findings highlight gender-specific implications for social policy and emphasize the need for support in promoting successful aging and reducing social inequities among involuntary retirees.

Shin et al. 2025.

Journal of Gerontological Social Work, vol. 68, no. 4.

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Keywords: Retirement transitions; gender differences; sequence analysis; well-being.

Evidence Level: 4B

Link: <https://www.tandfonline.com/doi/full/10.1080/01634372.2024.2413880>

Older workers spend less time in extreme trunk and upper-arm postures during order-picking tasks:

Results from field testing

Order picking tasks require repetitive trunk and upper arms movements that may increase the risk of developing musculoskeletal disorders, particularly among older workers due to the decline of their physical capabilities with aging. We proposed an approach based on a limited number of wearable inertial sensors to assessed exposures to non-neutral trunk and upper arms postures among both older and young workers during their regular work-shifts. The obtained data were processed according to international standards (ISO 11226 and EN 1005-4) to detect the existence of possible differences associated with age-specific working strategies. While the results indicate similar trunk and upper arms movement frequencies in both groups, older workers spend a significantly smaller percentage of time in the most demanding (>60°) postures for both districts. Such findings suggest the adoption of specific strategies to reduce the biomechanical risk which might be originated by a combination of awareness of physical limits and superior working experience. In this context, the instrumental monitoring of upper body in the logistic sector may result useful to highlight critical conditions potentially able to promote the onset of musculoskeletal

disorders, thus supporting the decision processes pertaining to workers' health management and aging worker retainment.

Porta et al. 2025.

Applied Ergonomics, vol. 125.

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Keywords: Aging workers; inertial sensors; postural exposure.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S0003687024002394?via%3Dihub>

Does economic skills obsolescence increase older workers' absenteeism?

Objectives: This paper is the first multidisciplinary study into the impact of new skill requirements in the job on absenteeism. The aim of this study was to investigate whether economic skills obsolescence (ESO) increased both absence frequency and average duration mediated by burnout and/or work engagement.

Methods: A longitudinal study was conducted on data from the Dutch Study on Transitions in Employment, Ability and Motivation (N=4493). Structural equation modelling was used to test the specific direct and indirect effects of ESO on absence frequency and average duration, followed by bootstrapping to compute the confidence intervals. **Results:** ESO at baseline had a positive relationship with burnout at follow-up. In turn, burnout was positively related to both absence frequency and average absence duration at follow-up. The bootstrap indirect effect test showed that ESO had a significant positive indirect effect, via burnout and (lower) work engagement, on absence frequency and average duration. Furthermore, ESO at baseline was negatively related to work engagement at follow-up. Work engagement, in turn, was negatively related to absence frequency and average duration at follow-up. The bootstrap test showed that ESO had a significant indirect effect, via work engagement, on absence frequency. **Conclusion:** ESO is associated with subsequent absence frequency and average duration of workers, both mediated by burnout and decreased work engagement.

Messioui et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 3.

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Keywords: Absenteeism; older workers; economic skills.

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/4222>

Technology

Exploring the influence of individual digitalization on technostress in Chinese IT remote workers: The mediating role of information processing demands and the job complexity

This research study explores the connection between individual digitalization and technostress among Chinese IT remote workers, focusing on the mediating roles of Information Processing volume and Job Complexity. Concurrently, the escalation in both the volume of Information Processing and the Job Complexity necessitates higher levels of individual digitalization, potentially influencing technostress. The study specifically examines how the digitalization levels of remote workers relate to their work-related stress, as well as the potential mediating role of Information Processing demands, encompassing Job Complexity and the quantity of Information Processing. The study involved two distinct groups of Chinese IT professionals (N = 972) working remotely in different sectors: tourism and hospitality (n = 317) and banking product sales (n = 655). The findings reveal that individual digitalization is negatively linked to technostress among Chinese IT remote workers and that Job Complexity and Information Processing mediate this relationship. Additionally, the direct effects of individual digitalization on Job Complexity and Information Processing varied significantly based on the type of organization, as predicted. Workers in the

banking sector showed a more substantial effect of individual digitalization on Job Complexity compared to those in the tourism and hospitality sectors. Similarly, the impact of individual digitalization on Information Processing demands was lower for remote workers in the banking sector than those in the tourism and hospitality sectors, despite both being statistically significant. This study contributes to the ongoing discussion on employee well-being, emphasizing the importance of the workplace environment and job design in effectively managing technostress.

Xie et al. 2025.

Acta Psychologica, vol. 255.

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Keywords: Chinese IT remote workers; digital literacy; employee well-being; Hayes' Model 58; Technostress; workplace environment.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0001691825001957?via%3Dihub>