Australian Government
Comcare

Workplace Research Monthly

October 2025

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 September 2025 only.

Comcare does not conduct critical evaluations of the articles listed in the Workplace Research Monthly. Articles are arranged from highest to lowest quality based on levels of evidence outlined in table 1 and 2.

Contents

Description of Evidence Levels Definitions Used in this Review

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

Level of Evidence	Description
Level 1	Evidence from a systematic/scoping review or meta-analysis of relevant studies.
Level 2	Evidence from a 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

Enabling Healthy and Safe Workplaces

Health and Wellbeing

Nature-based solutions in workplace settings: A scoping review on pathways for integrated quality, environmental, health, and safety management

Occupational environments often expose workers to physical and psychological stressors that compromise well-being and productivity. While biophilic design has gained attention, there remains limited systematic integration of Nature-Based Solutions (NbS) within workplace management frameworks. This review aims to map the empirical impacts of NbSs on occupational health, productivity, and environmental quality, and to identify key barriers and facilitators for their integration into comprehensive Quality, Environmental, Health, and Safety (QEHS) management systems. A scoping literature review was conducted in accordance with the PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) guidelines. A comprehensive search was performed in the Scopus and Web of Science databases for studies published between 2019 and 2024. A total of 2452 records were initially retrieved, with 39 studies retained for synthesis following screening, eligibility assessment, and critical appraisal using the Joanna Briggs Institute checklist. Findings indicate that NbSs can reduce stress, improve physical and cognitive health, and enhance workplace productivity. Reported benefits include reduced absenteeism, improved indoor air quality, and measurable financial returns. However, significant challenges persist, including high upfront costs, ongoing maintenance demands, a shortage of specialized labor, and methodological heterogeneity across studies. In particular, hybrid approaches combining physical natural elements and immersive technologies such as virtual reality emerged as promising alternatives for spatially constrained environments. Participatory co-design and stakeholder engagement were also identified as critical success factors for effective implementation. Integrating NbSs into QEHS frameworks has the potential to foster healthier, more resilient, and sustainable workplaces. Alignment with recognized certifications can further support systematic adoption and monitoring. Future research should prioritize longitudinal designs, standardized outcome metrics, and physiological markers, while addressing geographical gaps through studies in underrepresented regions. Embedding participatory processes and certification alignment can enhance stakeholder buy-in and practical scalability, advancing the integration of NbSs into holistic workplace management strategies.

de Castro et al. 2025.

J International Journal of Environmental Research and Public Health, vol. 22, no. 9.

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

Keywords: Biophilic design; environmental quality; nature-based solutions; occupational health; workplace setting.

Evidence Level: 1A

Link: https://www.mdpi.com/1660-4601/22/9/1455

The role of employee surveys to promote physical health and healthy lifestyles at the workplace: A scoping review

Background: Employee surveys aim to assess employees' attitudes and work environments and offer a strategic approach to workplace improvement. However, in these surveys, areas related to health and lifestyle are often overlooked, despite their relevance to the wellbeing and performance of the employees. The aim of this scoping review was to examine the role of employee surveys in promoting physical health and healthy lifestyles among employees at the workplace. **Methods**: To be eligible for inclusion, published articles needed to investigate employees' physical health or lifestyles and utilize employee survey data, be published in English within the last 10 years (2014-2024) and be available in full text in the databases ProQuest one business, Emerald Insight, PubMed, Web of Science and Scopus. **Results**: 1,550 studies were screened, and eight studies fulfilled the inclusion criteria. Of these, two studies assessed data at two time points to study change over time, and only one study aimed to influence behavior change of employees. This demonstrates a lack of evidence-based methods for linking employee surveys data to health promoting initiatives in a workplace context. **Conclusions**: This scoping review highlights an urgent knowledge gap in the literature. Future research should explore the process of using employee surveys for identifying health related problems, designing and implementing solutions, follow-up improvements, and thereby creating a workplace health promoting loop process. **Registration**: A study protocol has been preregistered on Open Science Framework with registration number xza4m.

Heikinniemi et al. 2025.

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

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

Keywords: Employee surveys; physical health; healthy lifestyles; workplace; Scoping review

Evidence Level: 1A

Link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24716-7

Lack of recovery from work and changes for the worse in working conditions: The role of vitality as a mediator of lack of detachment and sleeping problems in a 12-wave panel study

Objective: Despite extensive research on occupational stress and impaired recovery, the reverse effects of lack of recovery on work conditions remain largely underexplored. **Methods**: Panel questionnaire data from N = 4,322 Swiss workers were collected annually across 12 years. Lack of detachment, sleeping problems, vitality, and changes in working conditions were analyzed using growth curve models. **Results**: From 2007 to 2019, lack of detachment and sleeping problems increased while vitality and working conditions deteriorated. Vitality predicted the deterioration of working conditions and mediated the detrimental influence of lack of detachment and sleeping problems on working conditions. **Conclusions**: Individuals' recovery status decreased between 2007-2019, while incomplete recovery antecedes a loss of work design quality. Thus, reversed effects of recovery should be a focus of occupational health promotion.

Tritschler et al. 2025.

Journal of Occupational and Environmental Medicine, vol. 67, no. 9.

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

Keywords: Job characteristic; reciprocal association; recovery activity; recovery as an outcome; recovery experience; recovery process; reversed effect.

Evidence Level: 4B

Link:
https://journals.lww.com/joem/fulltext/2025/09000/lack_of_recovery_from_work_and_changes_for_the.13.aspx

Occupational differences in working life expectancy and working years lost in Nordic countries

Objective: Risk of exit from work is both occupation- and country-specific. This study investigated occupational differences in working life expectancy (WLE) and reasons for working years lost (WYL) among employed workers in three Nordic countries. **Methods**: We utilized registry-based cohorts of the employed population in Denmark (N=2 383 657), Finland (N=1 266 705) and Norway (N=1 761 166) to estimate WLE for ages 30-65 using the Sullivan method with 2015 data. We further estimated WYL due to sickness absence, unemployment, disability retirement, old-age retirement and other reasons. The analyses were stratified by gender and major occupational group (1st digit in the ISCO-88 code). **Results**: Occupational differences in WLE and WYL were observed in all countries. The overall pattern across the countries showed that legislators, senior officials and managers and professionals generally had high WLE, while service and sales workers and employees in manual occupations tended to have lower WLE, with employees in elementary occupations performing the worst. Reasons for WYL varied with country. In general, disability retirement was a significant factor in Denmark, unemployment in Finland, and sickness absence in Norway. **Conclusion**: A similar occupational pattern in WLE was observed across the countries, with some occupational groups consistently showing high or low WLE. However, the magnitude of occupational differences in WLE and the reasons for WYL varied across the countries.

Undem et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 51, no. 5.

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

Keywords: Occupational differences; life expectancy; working years; Nordic.

Evidence Level: 4B

Link: https://www.sjweh.fi/article/4239

Discomfort experienced due to the odor and physiological responses of residual tobacco smoke brought into workplaces by smokers on work performance and mental health

Background: The discomfort experienced due to residual tobacco smoke, a form of thirdhand smoke exposure brought into workplaces by smokers, and its health impacts on non-smokers have been inadequately investigated. This study explored associations between non-smokers' discomfort and work performance and mental health. **Methods**: This observational internet-based survey was conducted in 2021 as part of the Japan Society and New Tobacco Internet Survey. Participants comprised 6,519 adult workers without firsthand or secondhand smoking. Work performance and mental health were evaluated using the Work Functioning Impairment Scale (WFun) and Kessler Psychological Distress Scale (K6), respectively. The proportion of participants who experienced discomfort from the residual tobacco smoke in their workplace by smokers in the previous year was calculated according to the workplace's smoke-free policy, and the difference was assessed using the $\chi 2$ test. The association between such discomfort and WFun and K6 scores was examined using univariable and multivariable logistic regression analyses. **Results**: Among respondents, 17.1% reported experiencing discomfort due to the residual tobacco smoke. A strict smoke-free workplace policy was associated with a lower proportion of respondents experiencing such discomfort ($P < 0.001$). Those who experienced discomfort more frequently had significantly higher scores on the WFun (15.5% "never", 21.3% "sometimes", 26.2% "frequently") and K6 (37.8% "never", 48.2% "sometimes", 50.8% "frequently"). Adjusting for potential covariates in multivariable analyses did not change these results. **Conclusion**: Discomfort from thirdhand smoke was associated with worse work performance and mental health problems. Promotion of strict smoke-free workplace policies is required to reduce such experiences.

Kiyohara et al. 2025.
Journal of Epidemiology, vol. 35, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0)* (*https://creativecommons.org/licenses/by/4.0/*)
Keywords: Mental health; presenteeism; residual tobacco smoke; smoke-free policy; thirdhand smoke.
Evidence Level: 4B
Link: https://www.jstage.jst.go.jp/article/jea/35/9/35_JE20240354/_article

Well-being, physical activity and health promotion among officers and ratings on board cargo ships: A cross-sectional study

Background: Health and well-being of seafarers working on merchant vessels is an essential area of research, given the significant physical and psychological demands placed on these workers. The present study focuses on assessing the current health status and well-being, identifying personal needs and requirements for health promotion among officers and ratings on board. **Methods**: A total of 583 seafarers from a German shipping company were surveyed by using a questionnaire including the standardized WHO-5-Well-being Index, PHQ-9, GPAQ and questions about the need for health measures as well as physical activity. **Results**: The survey was distributed to 616 seafarers on 33 merchant ships with a response rate of 94.6%. Officers reported lower well-being compared to ratings (60.1% vs. 70.0%, $p = 0.001$). Regarding depressive symptoms no significant differences between the rank groups were found. Furthermore, ratings stated a significantly higher total physical activity than officers (10,437 vs. 8,035 MET-min/week, $p = 0.005$), while officers were significantly more sedentary compared to ratings (3.5 vs. 2.4 hours/day, $p = 0.001$). Seafarers also reported a high interest in sports on board (>56%) and health promotion (>60%), with a preference for digital formats and monetary incentives for participation in health programs. **Conclusion**: The impaired well-being of seafarers compared to shore-based reference groups underscores the need for targeted, digital interventions to improve the health and well-being of seafarers. The findings highlight significant differences in well-being, physical activity, and interest in health promotion between officers and ratings. Future research should apply longitudinal designs to better understand the causal relationships between occupational and socio-demographic factors with health outcomes among seafarers.

Reck et al. 2025.
PLoS One, vol. 20, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0)* (*https://creativecommons.org/licenses/by/4.0/*)
Keywords: Well-being; physical activity; officers; cargo ships; health promotion.

Evidence Level: 4B
Link: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0333588

The cost of collectivism: The role of workaholism and exploitation in the psychosocial mechanisms of overwork

Over 10,000 Japanese people are estimated to die annually from overwork. Yet, the reasons why some employees in certain cultures persist in exploitative work environments remain unclear. This study investigates psychosocial factors that prevent exploited employees from leaving their organisations, with a specific emphasis on the role of collectivism. We hypothesise that perceptions of an overwork climate and elevated levels of workaholism contribute to employees' feelings of exploitation, subsequently increasing turnover intentions. Additionally, we predict that collectivism exacerbates the effect of overwork climate on workaholism and weakens employees' intentions to leave their exploitative work environment. Data from 147 Japanese employees were collected via online surveys using snowball sampling. Factor score path analysis and mediation tests (5,000 bootstrap samples) were employed to test our hypotheses. Results suggested that feelings of exploitation are positively linked to turnover intentions, which are driven by the perception of an overwork climate and employees' compulsive orientation towards work. Importantly, collectivism weakened the link between perceived exploitation and turnover intentions. This study provides an account of the complex interplay between organisational climate, culture, and the impact of feeling exploited on employees' intentions to quit, highlighting the potential adverse effects of collectivism on employees.
Takagi et al. 2025.
Industrial Health, vol. 63, no. 5.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Collectivism; cross-cultural; employee turnover; organisational exploitation; overwork; psychosocial stress; workaholism.
Evidence Level: 4B
Link: https://www.jstage.jst.go.jp/article/indhealth/63/5/63_2024-0193/_article

Work and family-related stressors and risk of hazardous alcohol use: The role of social support: A cohort study in Sweden

Aims: To investigate whether work- and family-related stressors increase the risk of hazardous alcohol use among low-risk drinkers, and to examine the role of sex and social support. **Methods**: Overall, 4046 individuals aged 25-55 years, living and working in Stockholm, without a history of hazardous alcohol use, who completed the Mental Health, Work and Social Relations study questionnaire on work- and family-related stressors (exposures) during 1998-2000 and 2001-03, were included. This cohort was followed until 2010 for hazardous alcohol use (outcome) assessed by the Alcohol Use Disorder Identification Test. Weights for selective attrition were calculated, and crude and multivariate (adjusting for sociodemographic, health-, and baseline stress-related factors) logistic regression models, yielding odds ratios (ORs) with 95% confidence intervals (CIs), were used to estimate the exposure-outcome associations. The analyses were stratified by sex and social support. **Results**: The crude OR for hazardous alcohol use was 1.28 (95% CI: .88-1.88) and 1.48 (95% CI: 1.05-2.08) among individuals with work-related and family-related stressors, respectively, when compared with those without these exposures. The association between family-related stressors and hazardous alcohol use was slightly more pronounced among women (crude OR, 95% CI: 1.66, 1.02-2.71) and those with low social support (crude OR, 95% CI: 2.06, 1.17-3.62). Adjusting for the history of previous work- and family-related stressors explained most of the associations. **Conclusions**: In this population-based longitudinal study of individuals without a history of hazardous alcohol use, we found greater vulnerability to transitioning into hazardous alcohol use among those who experienced family-related stressors, particularly women and individuals with low social support.
Amin et al. 2025.
Alcohol and Alcoholism, vol. 60, no. 6.
User License: *Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: AUDIT; alcohol use disorder; cohort; job strain; population survey; stressful event.

Evidence Level: 4B
Link: https://academic.oup.com/alcalc/article/60/6/agaf058/8255855?login=false

Toileting and bladder health in the gig economy

Objective: An increasing percentage of the population participates in the "gig economy" - short-term work through online applications. This study often requires continuous travel without reliable restroom access. We aimed to assess toileting behaviors and bladder health in gig economy workers. **Methods**: Adult gig workers were electronically recruited using ResearchMatch. Participants completed validated questionnaires assessing bladder health, lower urinary tract symptoms (LUTS), toileting behaviors, and information about gig economy work. Toileting behaviors, coping strategies, and aspects of their work were compared between those with and without difficulty finding restrooms while at work. **Results**: Of 527 gig workers who participated, 80 (15%) reported difficulty finding restrooms while working. Demographics and type of gig work were similar between groups. Gig workers with difficulty finding restrooms reported higher rates of unhealthy toileting behaviors and coping strategies, such as fluid restricting and delayed voiding. While at work, those with difficulty finding restrooms experienced more severe LUTS. While difficulty finding restrooms was not associated with any psychosocial or demographic factors, it was associated with worsening of urinary symptoms since starting gig work. **Conclusions**: Gig workers overall report engaging in unhealthy toileting behaviors and coping strategies at work. Gig workers with difficulties in accessing restrooms while working report higher severity of irritative LUTS and are more likely to demonstrate poor toileting habits, which may further exacerbate underlying bladder conditions. Further research is needed to better understand the long-term associations between bladder health, restroom access and employment in the gig economy. **Clinical trial registration**: This study does not require clinical trial registration as no randomized clinic trial was performed.
Chisholm et al. 2025.
Neurourology Urodynamics, vol. 44, no. 7.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Bladder health; toileting behavior; workforce.
Evidence Level: 4B
Link: https://onlinelibrary.wiley.com/doi/10.1002/nau.70122

Work-related stress and burnout: Is epigenetic aging the missing link?

Background: Work-related stress is a well-established contributor to mental health decline, particularly in the context of burnout, a state of prolonged exhaustion. Epigenetic clocks, which estimate biological age based on DNA methylation (DNAm) patterns, have been proposed as potential biomarkers of chronic stress and its impact on biological aging and health. However, their role in mediating the relationship between work-related stress, physiological stress markers, and burnout remains unclear. **Methods**: Here, we analyzed DNAm data from 296 employed individuals (nfemale = 202; Mage = 45.4; SDage = 11.3; rangeage = 19.5-67.1) from the longitudinally assessed cohort of the Dresden Burnout Study to investigate whether epigenetic aging mediates the relationship between work-related stress (effort-reward imbalance), hair glucocorticoids (cortisol, cortisone), and burnout symptoms. We examined four epigenetic clocks (DNAm Skin&Blood Age, DNAm PhenoAge, DNAm GrimAge, and DNAm GrimAge2) at baseline and follow-up (one year later). Additional mediation analyses were conducted for depressive symptoms to distinguish their potential effects from those specifically associated with burnout symptoms. **Results**: As expected, work-related stress at baseline significantly predicted burnout ($\beta = .47$, $p < .001$) and depressive symptoms ($\beta = .32$, $p < .001$) at follow-up. However, epigenetic aging did not mediate these relationships, neither cross-sectionally (indirect effects of epigenetic age acceleration [EAA]: ßburnout = [-.0008, -.00001]) nor longitudinally (indirect effects of changes in raw clock estimates: ßburnout = [-.002, .007]). Furthermore, work-related stress and hair glucocorticoids were not significantly associated with any epigenetic age markers (all p values > .117), and both EAA and changes in epigenetic aging over time were unrelated to burnout or depressive symptoms (all p values > .190). Sensitivity analyses adjusting for blood cell composition and technical variance confirmed these findings. **Conclusions**: Consequently, our results do not support the hypothesis that epigenetic aging serves as a biological mechanism linking work-related stress or biological stress markers to burnout symptoms. While work-related stress significantly predicts burnout and depressive symptoms, its association does not appear to be driven by epigenetic aging pathways in a low to moderately burdened population. These findings underscore the need for longer follow-up studies to explore alternative biological and psychosocial pathways that shape the long-term consequences of work-related stress on mental health.

Eder et al. 2025.
Clinical Epigenetics, vol. 17, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Burnout; DNA methylation; depression; epigenetic clock; glucocorticoids; longitudinal; work-related stress.
Evidence Level: 4B
Link: https://clinicalepigeneticsjournal.biomedcentral.com/articles/10.1186/s13148-025-01968-z

A data-driven typology of individually perceived workplace environments and employee well-being

This study adopts a data-driven, employee-centered approach to explore how individually perceived workplace environments shape well-being. Analyzing over 1.3 million observations from 2017 to 2021, we identify nine key job demand and resource factors-including workload, emotional burden, job autonomy, organizational integrity, and support-using factor analysis. Rather than examining these dimensions in isolation, we apply Gaussian mixture models (GMM) to uncover ten distinct workplace types that reflect co-occurring patterns of demands and resources as experienced by individual employees, ranging from Grade D (least favorable) to Grade A1 (most favorable). Our findings reveal substantial variation in employee well-being-including mental health, work engagement, job satisfaction, and workplace cohesiveness-across these clusters. We further examine how changes in workplace type over time relate to changes in individual well-being, highlighting the importance of dynamic and subjective workplace conditions. By centering the employee perspective and identifying lived patterns of workplace experience, this study offers novel insights into workplace dynamics and supports more responsive, employee-oriented organizational policies and practices.

Xie et al. 2025.
Scientific Reports, vol. 15, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Cluster analysis; employee well-being; job demand-resource theory; subjective workplace; workplace environment.
Evidence Level: 4B
Link: https://www.nature.com/articles/s41598-025-18332-z

Work Health and Safety

Racial and ethnic disparities in occupational health

Importance: Occupational health disparities affect the safety and well-being of workers across different racial and ethnic groups. Understanding these disparities is crucial for developing targeted interventions, but evidence on occupational injury rates by race and ethnicity has been scarce due to data limitations. **Objective:** To determine the incidence of lost-time workplace injuries among major racial and ethnic groups in California and to assess the contributions of occupational concentration and within-occupation disparities to these differences. **Design, setting, and participants:** A cross-sectional study analyzing 15 years (2005-2019) of California workers' compensation data was carried out. The study examined injury rates across 4 racial and ethnic groups: Asian/Pacific Islander (non-Hispanic), Black (non-Hispanic), Hispanic, and White (non-Hispanic). California residents employed in the private sector or state and local government, encompassing diverse industries and occupations, between 2005 and 2019 were included. Analysis was conducted between May 2024 and May 2025. **Intervention:** The study analyzed existing workers' compensation data without specific interventions. **Main outcomes and measures:** The primary outcome was the incidence of lost-time workplace injuries, with comparisons made between racial and ethnic groups. The analysis focused on the role of occupational concentration and within-occupation

disparities in explaining injury rates. **Results**: The analysis included 2.6 million lost-time injuries among California workers (mean [SD] age, 42 [11]; 63% male). The overall injury rate was 1.32 lost-time injuries per 100 full-time equivalent workers (FTE). Lost-time injury rates were higher for Black (1.74 cases per 100 FTE) and Hispanic workers (1.90 cases per 100 FTE) than for White workers (1.00 cases per 100 FTE), whereas rates were lower for Asian/Pacific Islander workers (0.63 cases per 100 FTE). Black and Hispanic workers experienced injury rates that were 74% and 90% higher, respectively, compared with White workers, whereas Asian/Pacific Islander workers had injury rates that were 37% lower. Occupational concentration accounted for 53% of the disparity between Black and White workers and 71% of the disparity between Hispanic and White workers. Notably, 56% of the excess risk of injuries for Black women was attributed to within-occupation disparities. **Conclusions and relevance:** Disparities in workplace safety are a significant contributor to racial and ethnic health disparities. Addressing both occupational concentration and within-occupation disparities is essential for improving workplace safety and reducing health inequities among workers.
Dworsky et al. 2025.
JAMA Health Forum, vol. 6, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Racial disparities; ethnic disparities; occupational health.
Evidence Level: 4B
Link: https://jamanetwork.com/journals/jama-health-forum/fullarticle/2839235

Coping behavior toward occupational health risks among construction workers: Determinant identification using the COM-B model and data mining analysis

Background: China has the largest construction workforce in the world but faces severe occupational health challenges. Coping behaviors related to occupational health risks (CBOHR) are key to mitigating these hazards but remain understudied. **Materials and methods:** A cross-sectional survey of 484 construction workers was conducted to assess Capability, Opportunity, Motivation, and Behavior using the COM-B model. Structural equation modeling (SEM) was employed to test mediating pathways, and association-rule mining (ARM) was used to identify determinants of high- and low-level CBOHR. **Results**: The results showed that the COM-B framework-comprising three modules (Capability, Opportunity, and Motivation) with 15 behavior change domains, and a Behavior module with eight specific CBOHRs-demonstrated satisfactory fit, reliability, and validity. Bootstrapping confirmed that Motivation fully mediates the relationship between Capability and Behavior and partially mediates the relationship between Opportunity and Behavior. ARM further identified key domains associated with high and low levels of CBOHR. **Conclusion**: Strongly correlated item sets identified through association rule analysis revealed domains strongly linked to both high (and low) levels of each CBOHR. This study is the first to integrate the COM-B model with data mining in the context of occupational health, highlighting "motivation-values-policy" as actionable levers for CBOHR interventions. The findings provide preliminary evidence to support the development of scalable worker health programs.
Yang et al. 2025.
Frontiers in Public Health, vol. 12.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: COM-B model; association rule analysis; behavior change technique; construction worker; coping behavior; occupational health risk.
Evidence Level: 4B
Link: https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1643332/full

Pathway to enhancing safety behavior of construction workers through subjective well-being

Introduction: This study empirically examines the influence of subjective well-being on the safety behavior of construction workers. A theoretical model is constructed based on the relationships among subjective well-being, safety awareness, safety risk perception, work stress, and safety behavior. **Methods**: Empirical analysis was conducted using SPSS and AMOS software on data collected from 436 valid samples to test the proposed hypotheses and model. **Results**: The results indicate that subjective well-being has a positive impact on the safety behavior of construction workers. Safety awareness significantly enhances the ability

of workers to perceive safety risks. Both safety awareness and safety risk perception serve as significant mediators in the relationship between subjective well-being and safety behavior. Furthermore, work stress negatively moderates the relationship between subjective well-being and safety behavior.
Discussion: The findings underscore the importance of promoting subjective well-being to enhance safety behavior among construction workers. The mediating roles of safety awareness and risk perception, along with the moderating effect of work stress, provide a comprehensive understanding of the underlying mechanisms. These insights offer valuable implications for developing targeted interventions to improve safety outcomes in the construction industry.
Liu et al. 2025.
Frontiers in Public Health, vol. 13.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Safety awareness; safety behavior; safety risk perception; subjective well-being; work stress.
Evidence Level: 4B
Link: https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1652268/full

The impact of coal miners' emotions on unsafe behavior: A study on the mediated effects with a moderating role

This study aims to reveal how emotions influence Unsafe Behavior among coal miners, addressing the increasingly severe safety issues in the coal mining industry. As the complexity of mining environments grows, the impact of workers' emotional states on safety behaviors has garnered widespread attention. Based on emotion regulation theory and psychological mediation models, we analyzed survey data from 250 workers across multiple subsidiary mining units of a single coal mining enterprise in China, employing regression analysis and Bootstrap methods to examine the relationships among emotions, unsafe psychological states, and Unsafe Behavior. Additionally, we introduced safety climate as a moderating variable to enhance the explanatory power of the model. The results indicate that positive emotions significantly reduce the occurrence of Unsafe Behavior by lowering unsafe psychological states, whereas negative emotions significantly increase Unsafe Behavior by enhancing unsafe psychological states. Furthermore, unsafe psychological states play a mediating role between emotions and Unsafe Behavior, highlighting the crucial role of psychological factors in the emotional influence on behavior. Further analysis shows that safety climate moderates the relationship between negative emotions and unsafe psychological states. Specifically, under a high safety climate, the impact of negative emotions on unsafe psychological states is weakened. This study provides theoretical support and practical reference for safety management in the coal mining industry, offers empirical evidence for the development of emotional regulation and psychological intervention strategies, and emphasizes the importance of fostering a favorable safety climate.
Chen et al. 2025.
PLoS One, vol. 20, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Coal miners; emotions; unsafe behaviour.
Evidence Level: 5B
Link: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0331127

Risk Assessment

Assessing cancer risk in firefighters in Northern Germany: A retrospective cohort study

Background: The aim of this study is the analysis of cancer incidence and mortality among the firefighters of the municipal fire brigade in the city of Neubrandenburg in Germany. **Methods**: To asses cancer risk standardized incidence ratios and standardized mortality ratios were computed. The risk of the firefighter cohort was compared to the risk of two reference populations: the county Mecklenburg Lake District, where the city of Neubrandenburg is located, and the federal state Mecklenburg-Western Pomerania. **Results**: Results are based on data from 100 firefighters. No statistically significant results were observed for the incidence or mortality of all cancers (ICD-10 C00-C97 without C44). The SIR and SMR for bladder

cancer were significantly elevated. **Conclusion**: The overall cancer incidence and mortality among Neubrandenburg's firefighters were not higher than among the reference population. The increased incidence and mortality from bladder cancer are in line with published results, especially with the monograph by the International Agency for Research on Cancer on occupational exposure as a firefighter.
Ernst et al. 2025.
BMC Public Health, vol. 25, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Cancer registry; firefighters; occupational cohort; standardized incidence ratio; standardized mortality ratio.
Evidence Level: 4B
Link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24342-3

Occupational health risks, safety essentials, and safety beliefs among construction workers in Bangladesh

Construction workers in Bangladesh experience disproportionate occupational health risks due to the lack of or inadequate safety measures. This study explores the on-site occupational health risks, the essential safety measures, and workers' safety beliefs in Bangladesh's construction industry. Following purposive sampling method, data were collected through forty in-depth interviews (IDIs) with workers and ten key informant interviews (KIIs) with contractors and building owners across nine construction sites, using a checklist and interview guidelines. The findings reveal that health risks vary by age and work experience, while formal safety training is virtually non-existent. Contractors typically provide substandard or insufficient personal protective equipment, and managerial oversight is limited due to weak supervision, disorganized worksites, and poor communication. Workers' unsafe behaviors are primarily driven by low safety awareness, minimal education, and economic necessity. Safety beliefs, shaped by local work culture, peer influence, and individual confidence, contribute to risky behaviors and heightened health hazards. The findings align with Reason's Accident Causation Theory and suggest an extension of the Theory of Planned Behavior to better capture localized safety perceptions. A context-specific framework is proposed to enhance occupational health and safety practices in Bangladesh's construction industry.
Ahmad et al. 2025.
Scientific Reports, vol. 15, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Bangladesh; construction workers; occupational health; safety belief; safety essentials.
Evidence Level: 5B
Link: https://www.nature.com/articles/s41598-025-12621-3

Ergonomics

The role of ergonomics in enhancing work motivation and performance of virtual assistants in e-commerce

The shift to remote work has increased demand for virtual assistants (VAs), especially in the e-commerce sector. This study investigated how physical, cognitive, and macro-ergonomic factors affect VAs' work motivation and performance using Partial Least Squares Structural Equation Modeling (PLS-SEM) on responses from 418 VAs in the National Capital Region (NCR), Philippines. Results showed that workstation design and perceived temperature significantly influenced physical ergonomic appraisal, which in turn positively affected work performance ($\beta = 0.338$, $p = 0.022$) but not motivation. Cognitive ergonomic appraisal, driven by task engagement and autonomy, had significant positive effects on both work motivation ($\beta = 0.342$, $p = 0.001$) and performance ($\beta = 0.294$, $p = 0.002$). Macro-ergonomic factors, including reward systems, supervision, and organizational support, also significantly boosted both motivation ($\beta = 0.484$, $p < 0.001$) and performance ($\beta = 0.390$, $p = 0.001$). Work motivation strongly predicted work performance ($\beta = 0.678$, $p < 0.001$), explaining 63 % of its variance. These findings emphasize that while physical ergonomics enhance efficiency, cognitive and organizational resources are more critical for sustaining motivation. Grounded in Self-Determination Theory and the Job Demands-

Resources model, this study offers practical insights for improving remote work design. Recommendations include ergonomic investments, promoting autonomy, and structured organizational support. Future research should explore longitudinal effects and sector-specific nuances.

Gumasing et al. 2025.

Acta Psychologica, vol. 259.

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

Keywords: E-commerce; ergonomics; JD-R; remote work; SDT; virtual assistants; work performance.

Evidence Level: 4B

Link: https://www.sciencedirect.com/science/article/pii/S0001691825006924?via%3Dihub

Chronic Health Issues

Cardiac rehabilitation for workers with ischemic heart disease: Benefits for cardiovascular health and quality of life

Cardiac rehabilitation programs (CRPs) are multifactorial interventions defined by the World Health Organization as essential strategies to improve patients' health-related quality of life (HRQoL) by enhancing their physical, psychological, social, and occupational well-being. These programs are a cornerstone in the comprehensive treatment of heart disease, facilitating the recovery of functional capacity and reintegration into the workforce through a multidisciplinary approach. The objective of this study was to assess the efficacy of CRPs in enhancing functional capacity (cardiac and psychological) and HRQoL in workers with ischemic heart disease. An observational pre-post study without a control group was conducted, focusing on actively employed individuals with ischemic heart disease. A total of 214 patients were included, selected according to specific inclusion criteria after excluding those not suitable for longitudinal follow-up. Participants were active workers aged 18 to 65 years who were prescribed a CRP between January 2020 and December 2021. Sociodemographic, occupational, cardiovascular risk, and clinical-therapeutic data were collected to evaluate changes following completion of the program. Health-related quality of life (HRQoL) was also assessed. A total of 214 patients were included, 83.9% male, with a mean age of 54.21 years. Most had a history of hypertension, dyslipidemia, smoking, low physical activity, overweight or obesity, and a family history of ischemic heart disease. Among those who started the program (94.4%), the most common diagnosis was acute myocardial infarction involving a single coronary vessel. Additionally, 77.1% underwent stent angioplasty, and 47.2% participated in a moderate-risk CRP. After completion, the SF-36 score improved significantly (46.92 vs 70.21), and depressive symptoms decreased (55.10% vs 38.22%). Significant benefits were observed in most modifiable cardiovascular risk factors, along with an increase in the proportion of patients with preserved left ventricular ejection fraction (65.4% vs 72%) and in metabolic equivalent (MET) levels. In 157 participants (73.4%), MET gain was quantified, with a mean increase of 2.67 ± 1.64 METs. These findings suggest that cardiac rehabilitation, as a secondary prevention strategy, effectively improves cardiac function and HRQoL in working-age patients with ischemic heart disease.

Delgado-Calderón et al. 2025.

Medicine, vol. 104, no. 36.

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

Keywords: Cardiac rehabilitation; cardiovascular risk management; functional capacity; health-related quality of life; ischemic heart disease; preventive cardiology; psychosocial determinants; tertiary prevention.

Evidence Level: 4B

Link: https://journals.lww.com/md-journal/fulltext/2025/09050/cardiac_rehabilitation_for_workers_with_ischemic.56.aspx

Emotional burden of patients with work-related hand eczema: results of an exploratory study in a tertiary individual prevention setting in Germany

Background: Work-related hand eczema (WRHE) is a prevalent skin condition associated with reduced health-related quality of life (HRQoL), sleep disturbances or depression. While prior studies primarily explored emotional effects as part of HRQoL, emotions have been less studied separately. **Objectives**: To evaluate the psychometric properties of the 'Atopic Eczema Score of Emotional Consequences' (AESEC) in patients with WRHE and to investigate the emotional impact of WRHE. **Methods**: Self-reported sociodemographic data as well as self-reported and clinically assessed disease severity of 223 patients (55.6% female; mean age: 48.1 ± 12.0 years) taking part in a tertiary prevention program for WRHE were included in the analysis. The factor structure was checked using an exploratory factor analysis. The emotional burden was determined using the AESEC. **Results**: The three underlying facets of emotional consequences, as previously described in the validation study of the AESEC, could not be replicated in patients with WRHE. Positive emotions were emphasised by items such as optimism, balance and self-confidence. Emotional burden was most evident in worries about life, sadness, lack of control, feelings of constraint and disturbance by itch. **Conclusions**: Patients with WRHE face a significant emotional burden indicating a great need for psychological support. Further studies on the psychometric properties of the AESEC in patients with WRHE are warranted.

Rocholl et al. 2025.

Contact Dermatitis, vol. 93, no. 3.

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

Keywords: Germany; cross sectional study; disease burden; emotional impact; work‐related hand eczema.

Evidence Level: 4B

Link: https://onlinelibrary.wiley.com/doi/10.1111/cod.14819

Associations between depressive symptoms, cognitive impairment, and work productivity loss in patients with bipolar disorder: A 48-Week Longitudinal Analysis

Aim: To examine the relationships among work productivity loss and changes in depressive symptoms and cognitive impairment in patients with bipolar disorder and to investigate the relationship between bipolar disorder symptoms and work productivity loss. **Methods**: This prospective, 48-week, longitudinal, web-based, cohort questionnaire study included adults with bipolar disorder in Japan who were employed or on sick leave. Questionnaire surveys including validated self-administered rating scales assessing cognitive impairment, work productivity loss, quality of life (QOL), depressive symptom severity, and sleep disturbance were completed every 12 weeks from baseline through Week 48. The primary endpoint was the correlation between change from baseline at 48 weeks in cognitive impairment and work productivity loss. Secondary endpoints included change from baseline in each symptom score, cognitive impairment, work productivity loss, depressive symptoms, QOL, and sleep disturbance. **Results**: Of 211 study participants, 179 responded to all the study questionnaires and were included in this 48-week analysis. There was a weak correlation between change in cognitive impairment and change in work productivity loss (presenteeism) from baseline to Week 48 (Pearson correlation coefficient = 0.304, $p = 0.001$), but the multiple regression analysis showed no association. Change in work productivity loss was significantly associated with change in depressive symptoms (regression coefficient = 2.43, $p < 0.001$). Change in QOL was significantly associated with change in insomnia (regression coefficient = -0.01, $p < 0.05$) in multiple regression analyses. **Conclusion**: Treating patients with bipolar disorder to improve depressive symptoms and cognitive impairment may benefit work productivity.

Takaesu et al. 2025.

Neuropsychopharmacology Reports, vol. 45, no. 3.

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

Keywords: Bipolar disorder; cognitive dysfunction; depression; presenteeism; quality of life.

Evidence Level: 4B

Link: https://onlinelibrary.wiley.com/doi/10.1002/npr2.70036

Occupational risk factors for asthma exacerbation in adults: A five-year follow-up of the Norwegian Telemark study cohort

Objectives: Asthma exacerbation due to occupational exposure is highly prevalent among adults with asthma. This study assessed the association between occupational risk factors and asthma exacerbation and estimated the impact of asthma exacerbations on job change, sick leave and work ability. **Methods**: In a prospective study of respiratory health in Telemark, Norway, 1857 adult participants with physician-diagnosed asthma were invited to participate in a follow-up survey. Among those who responded, 740 were found eligible for this study. Participants were categorized into overall, mild, and severe asthma exacerbation groups based on self-reports of hospitalization, doctor or emergency visits for breathing difficulties, or increased or new use of lung medications. Logistic regression, adjusted for age, sex, and smoking, was used to assess associations between self-reported asthma exacerbation and exposure to VGDF, job exposure matrix (N-JEM) data, job change, sick leave, and work ability. **Results**: Asthma exacerbation occurred in 140 (19%) responders; 83 had mild exacerbations and 57 severe exacerbations. Severe exacerbation was associated with daily VGDF exposure (OR 2.57, 95% CI 1.15-5.78) and accidental peak exposure to irritants (OR 4.62, 95% CI 1.13-18.85). Both overall and severe exacerbation were associated with job changes (OR 5.40, 1.26-5.65; OR 3.06, 1.16-8.07), sick leave (OR 1.94, 1.33-2.85; OR 2.78, 1.57-4.92), and reduced work ability (OR 1.61, 1.04-2.49; OR 2.17, 1.18-3.98).
Conclusion: Asthma exacerbation was associated with VGDF exposure and some N-JEM occupational exposures. Reducing workplace exposure may decrease job-change, sick leave, and improve work ability in individuals with asthma exacerbation.

Zivadinovic et al. 2025.
Journal of Asthma, vol. 62, no. 9.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Public health; Telemark study; asthma; epidemiology; exacerbation; exposure; occupation.
Evidence Level: 4B
Link: https://pubmed.ncbi.nlm.nih.gov/40317170/

Disclosure decisions of workers living with a chronic health condition causing disability at work: Are decisions to disclose to co-workers and supervisors different?

Purpose: Individuals living with chronic physical or mental health/cognitive conditions must make decisions that are sometimes difficult about whether to disclose health information at work. This research investigated workers' decisions to not to disclose any information at work, disclosure to a supervisor only, co-workers only, or to both a supervisor and co-workers. It also examined personal, health, and work factors associated with disclosure to different groups compared to not disclosing information. **Methods**: Employed workers with a physical or mental health/cognitive condition were recruited for a cross-sectional survey from a national panel of Canadians. Respondents were asked about disclosure decisions, demographics, health, working experience, work context, and work perceptions. Multinomial logistic regressions examined predictors of disclosure. **Results**: There were 882 respondents (57.9% women). Most had disclosed to both co-workers and supervisors (44.2%) with 23.6% disclosing to co-workers only and 7% to a supervisor only. Age, health variability, and number of accommodations used were significant predictors of disclosure for all groups. Job disruptions were associated with disclosure to supervisors only and pain and comfort sharing were associated with co-worker disclosure. **Conclusion**: The findings highlight that disclosure to co-workers is common despite being an overlooked group in workplace disclosure research. Although many similar factors predicted disclosure to different groups, further research on workplace environments and culture would be useful in efforts to enhance workplace support.

Woticky et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Chronic disease; co-workers; disability; disclosure; employment; supervisors.
Evidence Level: 4B
Link: https://link.springer.com/article/10.1007/s10926-024-10235-6

Double Trouble! Do workplace supports mitigate lost productivity for young workers with both severe rheumatic diseases and depressive symptoms?

Background: The objectives of this longitudinal study were to understand how comorbid rheumatic disease and depression symptoms were associated with at-work productivity among young adults, and to examine whether workplace support modified this association. **Methods**: Seventy-six Canadian young adults who were employed and living with a rheumatic disease were surveyed three times over 27 months. Morbidity was defined by whether participants reported severe rheumatic disease symptoms and/or depressive symptoms. Participants were asked about presenteeism, absenteeism, and whether the workplace support needs (accommodation and benefit availability and use) were met. Generalized estimating equations were used to address study objectives. **Results**: Seventeen participants experienced neither severe rheumatic disease nor depressive symptoms (no morbidity), 42 participants experienced either severe rheumatic disease or depressive symptoms (single morbidity), and 17 participants reported comorbidity at baseline. Participants with comorbidity reported greater presenteeism scores and were most likely to report absenteeism, compared to the other two morbidity levels. Having workplace support needs met was associated with decreased presenteeism over the 27-month period among participants with no and a single morbidity. Conversely, unmet support need was associated with greater presenteeism for participants with comorbidity. Having workplace support needs met did not modify the association between morbidity and absenteeism. **Conclusion**: Comorbid rheumatic disease and depression burden reduce productivity among young adults. A supportive work environment has the potential to address at-work productivity challenges. Additional research is needed to understand how workplace supports coupled with clinical interventions may tackle challenges at work for young adults living with rheumatic disease and depression.

Dobson et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0)* (*https://creativecommons.org/licenses/by/4.0/*)
Keywords: Absenteeism; comorbidity; depression; productivity; rheumatic arthritis; workplace support.
Evidence Level: 5B
Link: https://link.springer.com/article/10.1007/s10926-024-10217-8

Occupational Exposure

Challenges in identifying and diagnosing asbestos-related diseases in emerging economies: A global health perspective

Background: Asbestos, a durable fibrous silicate once widely used for its thermal resistance, remains in use in countries like India and China despite being banned in over 70 nations and classified as a Group 1 carcinogen by IARC. Prolonged occupational exposure causes asbestosis, lung cancer, and malignant pleural mesothelioma, but in Low and Middle-Income Countries (LMICs) the true burden is underreported due to weak regulation, low awareness, limited diagnostics, and inadequate occupational health systems. Objectives: This review aimed to examine the epidemiological patterns and diagnostic challenges of Asbestos-Related Disease (ARDs) in emerging economies, with a focus on the applicability and limitations of existing and emerging diagnostic strategies. **Methods**: We conducted a narrative review of peer-reviewed literature, global databases (WHO, IARC), and recent cohort and cross-sectional studies, sourcing articles through structured keyword searches in PubMed, Scopus, and Google Scholar. Diagnostic approaches were compared across diverse healthcare settings, emphasizing radiological, histopathological, and functional tools. The review also assessed the utility of newer technologies, including low-dose CT (LDCT), ultra-low-dose CT (ULDCT), magnetic resonance imaging (MRI), FDG-PET is Fluorodeoxyglucose Positron Emission Tomography (FDG-PET), breath biomarkers using gas chromatography-mass spectrometry (GC-MS), and digital tomosynthesis (DTS). Findings: LDCT and ULDCT showed superior sensitivity for early detection of pleural abnormalities like circumscribed pleural plaques and diffuse thickening, yet distinguishing benign from malignant lesions remains difficult without biopsy. Diffusion capacity of the lungs for carbon monoxide (DLCO) emerged as a sensitive but nonspecific pulmonary function marker. Histopathological confirmation of mesothelioma remains the gold standard but is rarely accessible in low-resource settings. **Conclusion**: Addressing the diagnostic gap in ARDs in LMICs requires systemic strengthening of occupational health surveillance, better regulatory enforcement, expanded access to advanced diagnostic tools, and targeted clinician training. Without urgent intervention, the burden of asbestos exposure will remain an escalating public health crisis.

Roy et al. 2025.

Annals of Global Health, vol. 90, no. 1.

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

Keywords: Asbestos; asbestosis; developing countries; diagnosis; global burden; imaging; mesothelioma; occupational health.

Evidence Level: 1A

Link: https://annalsofglobalhealth.org/articles/10.5334/aogh.4871

Asbestos exposure and leukemia incidence: A systematic review and meta-analysis

Background/aim: Asbestos comprises six naturally occurring fibrous minerals known for their health risks, particularly in occupational settings. This systematic review evaluates the association between asbestos exposure and leukemia incidence, synthesizing findings from various studies. **Materials and methods:** We conducted a comprehensive literature search in PubMed, Cochrane Library, and Web of Science, adhering to PRISMA guidelines. Studies included participants exposed to asbestos compared to matched controls, focusing on leukemia incidence. Data extraction and quality assessment were performed using the Newcastle-Ottawa Scale. **Results**: A total of 1,751,580 participants were included, with 257,572 (14.7%) exposed to asbestos. The incidence of leukemia varied across studies, ranging from 0.02% to 0.45%. Meta-analysis revealed an overall risk ratio of 1.25 (95% confidence interval=0.81-1.94) with significant heterogeneity (I2=86%), indicating no statistically significant difference between exposed and non-exposed cohorts. **Conclusion**: The findings highlight the complexity of the relationship between asbestos exposure and leukemia, influenced by factors such as exposure type, duration, and confounding variables like smoking. While some studies suggest a potential link, the evidence remains inconclusive, necessitating further research. This review underscores the need for high-quality studies to clarify the association between asbestos and leukemia, informing public health policies to reduce exposure risks and protect vulnerable populations.

Dobos et al. 2025.

In Vivo, vol. 39, no. 5.

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

Keywords: Asbestos-related diseases; environmental exposure; hematopoietic neoplasms; leukemia; occupational carcinogenesis.

Evidence Level: 1A

Link: https://iv.iiarjournals.org/content/39/5/2739.long

Mechanisms leading to occupational oral exposure: A systematic review and meta-analysis

Introduction: In addition to inhalation and dermal exposure, also oral exposure is relevant in the workplace, even though this exposure route is most often neglected. In order to improve the understanding of occupational oral exposure, a systematic identification of mechanisms leading to inadvertent ingestion in the workplace is needed, including the transfer of chemicals and the contribution of aerosols. **Methods**: A systematic literature search was conducted according to the PRISMA method including 5 databases and 9 institutional websites. Information from the included studies was extracted in concept matrices and further analyzed. **Results**: Overall, 175 suitable publications were selected. Identified mechanisms leading to oral exposure were the transfer of chemicals, eg, from hands to mouth, and contributions from aerosols. Transfer influencing parameters were categorized as environmental, substance-specific, transfer pathway, surface, contact, or skin characteristics. **Discussion**: Even though oral exposure was mainly investigated for children so far, similar mechanisms can lead to oral exposure in adults. Although the parameters characterizing the transfer of chemicals were identified and categorized, inconsistencies in nomenclature were identified, and correlations between parameters and transfer efficiencies often remained unclear. **Conclusions**: The transfer of hazardous substances and the

contribution of aerosols were identified as mechanisms of oral exposure. Transfer parameters and the interplay between particles from aerosols and oral exposure were discussed.
Dietz et al. 2025.
Annals of Work Exposures and Health, vol. 69, no. 8.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: PRISMA; aerosols; inadvertent ingestion; mechanisms; occupation; oral exposure; transfer parameters; workplace.
Evidence Level: 1A
Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC12463556/

Global burden, projection, and inequalities analysis of cancer attributable to occupational carcinogen exposure in individuals aged over 40 years

Background: In this study, we investigated the global burden, projection, and inequalities of cancer attributable to occupational carcinogen exposure in individuals aged over 40 years. **Methods**: Using the Global Burden of Disease 2021 dataset, we examined age-standardized disability-adjusted life years (ASR-DALYs) and deaths associated with cancer attributable to occupational carcinogen exposure. Statistical analyses included: the estimated Annual Percentage Change to assess trends (1990-2021); Bayesian age-period-cohort modeling for projections to 2030 and 2050; decomposition analysis to quantify contributions of aging, population growth, and epidemiological changes; and slope and concentration indices (SII, CI) to evaluate health inequalities by sociodemographic index (SDI). **Results**: In 2021, the global ASR-DALYs attributable to occupational carcinogen exposure were 239.3 per 100,000 (95% uncertainty intervals [UI]: 180.76-300.91), with significant declines found since 1990. The ASR-deaths in the same year were 11.45 per 100,000 (95% UI: 8.57-14.29). By 2050, ASR-DALYs and ASR-deaths are projected to decline to 177.24 and 8.50 per 100,000, respectively. Men exhibited higher DALYs and mortality (3.92 million DALYs, 0.18 million deaths) compared with women. From 1990 to 2021, high SDI regions exhibited the most substantial decline, whereas low-middle SDI regions experienced the highest increase. The most prominent occupational carcinogens were asbestos (ASR-DALYs: 142.36 per 100,000), silica (50.36 per 100,000), and diesel engine exhaust (20.56 per 100,000). Among the seven types of occupational cancers observe, tracheal, bronchial, and lung cancers exhibited the highest ASR-DALY and ASR-deaths. Population growth is the primary contributor to both DALYs and deaths globally, followed by epidemiological changes. **Conclusion**: This study highlights the declining global burden of cancer due to occupational exposure to carcinogens; however, significant disparities persist. Addressing occupational cancer risk in low-SDI regions and under-researched populations is crucial for reducing this health burden.
Hu et al. 2025.
Cancer Medicine, vol. 14, no. 17.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Global Burden of Disease; asbestos; cancer mortality; disability - adjusted life years; lung cancer; occupational carcinogen.
Evidence Level: 4A
Link: https://onlinelibrary.wiley.com/doi/10.1002/cam4.71213

Occupational exposure to diesel particulate matter in Western Australian mining: A retrospective analysis and challenges to future compliance

De-identified diesel particulate matter (DPM) exposure data (n = 24,459) was obtained from the Western Australian mining regulator to assess compliance with the current Workplace Exposure Standard (WES) of 0.1 mg/m3, measured as submicron elemental carbon, and a proposed limit of 0.01 mg/m3, assessed as respirable elemental carbon. R and R-Studio were used to generate summary statistics comparing compliance to the current and proposed limits, stratified by industry and occupational groups. To examine temporal trends, a zero-adjusted gamma model was used to assess whether expected sample means changed over the past ten years, using commodity and location as covariates. DPM exposures have declined significantly over the past decade, and modelling indicates compliance with the current WES. However, the proposed limit introduces both a lower limit and a different sampling method, which present

challenges. The sector most affected by these changes is underground gold mining. Several occupational groups, such as ground/roof support, shotfirer, long hole drill and blast, and production and services, are at highest risk of non-compliance. Meeting future exposure limits will require enhanced control strategies, including, cleaner fuels, reduction or elimination of diesel-powered machinery in underground operations and appropriate and regulated use of respiratory protective equipment when assessing compliance.
Oosthuizen et al. 2025.
International Journal of Environmental Research and Public Health, vol. 22, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Mining industry; occupational hygiene; respirable elemental carbon; underground mining; workplace exposure limit; workplace exposure standard.
Evidence Level: 4A
Link: https://www.mdpi.com/1660-4601/22/9/1412

Associations between occupational exposures and cough subclasses among middle-aged Australians

Background and objective: The evidence around occupation-related chronic cough is conflicting and current definitions of chronic cough cannot capture its heterogeneity. Using our recently characterised novel cough subclasses, we aimed to identify subclass-specific occupational risks. **Methods**: Using data from the Tasmanian Longitudinal Health Study (TAHS), occupational exposures up to age 53 years were coded using the ALOHA+ Job Exposure Matrix, into ever-exposure (no, only-low, ever-high) and cumulative exposure. People belonging to six previously identified cough subclasses among 2213 current coughers at age 53 years were compared to non-coughers (n = 1396). Associations with occupational exposures were assessed using multinomial logistic regression for these cough subclasses and logistic regression for standard definitions (chronic cough, chronic phlegm, and chronic bronchitis) after adjusting for potential confounders. **Results**: Biological dust was associated with "cough with allergies" (cumulative: adjusted multinomial odds ratio [aMOR] = 1.06, 95% CI: 1.02-1.10, per 10 exposure-year increase). Aromatic solvents were associated with "chronic dry cough" (cumulative: aMOR = 1.15, 95% CI: 1.02-1.29). Other solvents were associated with "chronic productive cough" (ever-high: aMOR = 2.81, 95% CI: 1.26-6.2); "intermittent productive cough" (cumulative: aMOR = 1.06, 95% CI: 0.98-1.16), chronic bronchitis (ever-high: aOR = 2.48, 95% CI: 1.01-6.06); and chronic phlegm (ever-high: aOR = 2.26, 95% CI: 1.14-4.51). Herbicides (cumulative) were also associated with "intermittent productive cough" (aOR = 1.09, 95% CI: 1.00-1.77) and chronic phlegm (aOR = 1.07, 95% CI: 1.00-1.15). **Conclusion**: Novel cough subclasses had distinct associations with specific occupational exposures, suggesting different pathophysiology. Aromatic solvents were associated with dry cough; biological dust with allergic cough; herbicides and other solvents with productive cough. Using novel cough subclasses was superior to standard definitions in uncovering these associations.
Zhang et al. 2025.
Respirology, vol. 30, no. 9.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: COPD; Environmental & Occupational Health and Epidemiology; allergy; cough.
Evidence Level: 4A
Link: https://onlinelibrary.wiley.com/doi/10.1111/resp.70040

Association between occupational dust exposure and asthma prevalence in a nationally representative US population

Objective: This study sought to examine the relationship between exposure to different types of workplace dust (mineral dust, organic dust, exhaust fumes, and other fumes) and the prevalence of asthma in a nationally representative sample of the population in the United States. **Methods**: Using data from the National Health and Nutrition Examination Survey 2007-2012, we analyzed data of 16,841 participants after exclusions based on specific criteria. Logistic regression models were used to evaluate the association between dust exposure and asthma prevalence after adjusting for demographic and health-related covariates. **Results**: Our findings indicate that exposure to various types of dust is positively associated with the prevalence of asthma. This association remained significant after adjusting for age, sex, race, and other covariates. Notably, subgroup analysis revealed that females are more susceptible to asthma from dust exposure than males. In addition, individuals with higher body mass index and older age are more likely to have asthma due to dust inhalation. **Conclusion**: This study underscores the need for targeted occupational health interventions and policies, especially for high-risk groups such as females, those with higher body weight, and older individuals. Further longitudinal studies are recommended to establish causal relationships.

Dai et al. 2025.

Journal of International Medical Research, vol. 53, no. 9.

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

Keywords: National Health and Nutrition Examination Survey; Occupational health; asthma; dust exposure; epidemiology; respiratory diseases; workplace safety.

Evidence Level: 4B

Link: https://pubmed.ncbi.nlm.nih.gov/40891811/

Carpal tunnel syndrome and occupational co-exposure to biomechanical factors and neurotoxic chemicals using job-exposure matrices and self-reported exposure: Findings from the Constances cohort

Objective: To study the association between occupational co-exposure to biomechanical risk factors, potentially neurotoxic chemicals and carpal tunnel syndrome (CTS) in a large cohort of French workers, using two methods to estimate chemical exposure: job-exposure matrices (JEM) and self-reported exposure. **Methods**: A randomly selected sample of adults were included between 2012 and 2018 in the French cohort CONSTANCES. Self-reported CTS was assessed using the first self-administered follow-up questionnaire, sent out approximately one year after baseline. Occupational exposure to biomechanical risk factors was assessed using self-administered questionnaire completed at inclusion. Lifetime occupational exposure to chemicals was assessed using two different methods: with JEMs and with a self-administered questionnaire completed at inclusion. Multivariate logistic regression models were used to evaluate the association between co-exposure to biomechanical risk factors and chemicals and CTS, adjusted for personal and medical factors and stratified by gender. **Results**: For the analysis using JEM assessment, 35,941 workers (16,920 men and 19,021 women) were included: 261 men (1.5%) and 469 women (2.5%) declared having CTS at follow-up. There was an association between CTS and the co-exposure group: OR=2.37 [1.60-3.44] in men and OR=2.09 [1.55-2.77] in women, compared to the non-exposed group. For the self-reported chemicals analysis, 42,168 workers (20,877 men and 21,291 women) were included: 338 men (1.6%) and 532 women (2.5%) declared having CTS at follow-up. There was an association between CTS and the co-exposure group: OR=3.07 [2.28-4.08] in men and OR=2.68 [1.91-3.66] in women, compared to the non-exposed group. **Conclusions**: The study showed an association between self- reported CTS and co-exposure to biomechanical risk factors and chemicals. This finding should be confirmed using more objective case definition of CTS, e.g. carpal tunnel release surgery.

Bodin et al. 2025.

PLoS One, vol. 20, no. 9.

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

Keywords: Carpal tunnel syndrome; job exposure; co-exposure; biomechanical risk factors.

Evidence Level: 4B

Link: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0329324

Exposure to fungi, bacteria, and endotoxin in a museum, with staff reporting work-related symptoms

Occupational exposure to airborne fungi in indoor environments may pose respiratory health risks. This study aimed to characterize exposure to fungi, bacteria, and endotoxin in a historical museum where the staff reported airway symptoms. Air samples were collected during three separate workdays using personal and stationary samplers. Fungi and bacteria were quantified and identified using MALDI-TOF MS, and the total inflammatory potential was measured through Reactive Oxygen Species (ROS) production in a human cell line. The geometric mean of staff exposure was 5.9 × 103 CFU/m3 fungi, 1.8 × 103 CFU/m3 bacteria,

and 7.93 EU/m3 endotoxin. Staff reported symptoms of the airways, with immediate symptoms upon entering two departments, which exhibited elevated fungal concentrations compared to other departments. The most prevalent fungal species were Aspergillus conicus, A. domesticus, A. pseudoglaucus, A. pseudogracilis, and Cladosporium spp. Concentrations of bacteria were highest when staff were present and without dominance by any particular species. Staff exposure and stationary samples induced ROS production in a cell line, which correlated with concentrations of fungi, bacteria, and endotoxin. Fungi were detected on the museum artifacts, and concentrations of fungi and bacteria increased during handling of the artifacts. In conclusion, staff in the two departments where airway symptoms were reported were exposed to 2 × 104 to 7 × 104 CFU/m3 of fungi, primarily Aspergillus spp. and Cladosporium. spp. This exposure constituted both xerophilic species and species commonly found in water-damaged buildings, and they seemed to have developed on artifacts. These findings underscore the importance of developing preventive strategies to protect the health of museum staff. Moreover, it highlights the challenge of managing fungi adapted to varying humidity conditions.
Madsen et al. 2025.
Journal of Occupational and Environmental Hygiene, vol. 22, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Maldi-TOF MS; ODTS; nasal symptoms; occupational health; personal exposure; xerophilic fungi.
Evidence Level: 5B
Link: https://pubmed.ncbi.nlm.nih.gov/40435489/

Occupational mite allergy and asthma: An EAACI Task Force Report

Mite sensitization is notable in several occupational settings. Elevated house dust mite concentrations are primarily detected in workplaces where people congregate and are active. Allergy to storage mites and spider mites has commonly been reported in agricultural and various food processing occupations. Rapid expansion of biological pest control has resulted in increased exposure to predatory mites causing sensitization of greenhouse workers. Globally, mite populations in workplaces are likely to change due to climate change. Occupational relevant mites produce a variety of allergens and adjuvants that trigger both innate and adaptive immune responses. Cross-reactivity between allergens occurs due to shared IgE-binding epitopes to different allergens. Occupational allergy to mites typically causes rhinitis and asthma. Challenges of distinguishing the role of occupational exposure to allergens, also present in non-occupational environments, complicate the diagnosis of occupational mite allergy and asthma. Nevertheless, preventive measures to reduce exposure to mite allergens in workplaces are essential in mitigating occupational hazards. Further research is needed to better understand the incidence of occupational mite allergy and asthma. It is essential to identify the risk factors in different occupational settings, assess the impact of climate change on exposure, and determine the relevant allergens and their potential cross-reactivity.
Suojalehto et al. 2025.
Allergy, vol. 80, no. 9.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Allergy; asthma; mites; occupational; rhinitis.
Evidence Level: 6A
Link: https://onlinelibrary.wiley.com/doi/10.1111/all.16666

Musculoskeletal Health

Are there sex differences in wrist velocity and forearm muscle activity when performing identical hand-intensive work tasks?

Among workers performing hand-intensive tasks, musculoskeletal disorders in the upper extremities are more frequent in women than in men. However, risk assessments are generally not sex-specific, and it is not known whether exposures in regular work differ between females and males. The aim of this study was to compare measured wrist joint velocity and muscle activity between men and women performing

identical tasks. Participants (28 female-male pairs) performed one of eighteen hand-intensive on-site tasks. Wrist velocity was measured using inertial units. Forearm muscle activity was measured via surface electromyography and normalized to maximal voluntary electrical activation (MVE). The 10th, 50th, and 90th percentiles and time in muscle recovery (< 0.5 %MVE) were computed. Between-sex differences were tested using the Wilcoxon signed-rank test. Wrist angular velocities did not significantly differ between sexes in any percentile (all p > 0.374). The muscle activity was significantly higher in female workers (p < 0.001-0.004), ranging from 1.3 to 2.8 times higher, and they spent less time in muscle recovery (p < 0.001). In hand-intensive tasks involving women and men, risk assessments should prioritize assessments of women to ensure protection against work-related musculoskeletal disorders for all workers.
Dahlgreen et al. 2025.
Sensors (Basel), vol. 25, no. 17.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Hand-intensive work; risk assessment; sex difference; surface electromyography; wrist angular velocity.
Evidence Level: 3B
Link: https://www.mdpi.com/1424-8220/25/17/5517

Occupational biomechanical risk factors for carpal tunnel syndrome surgery: A prospective cohort study on 203 866 Swedish male construction workers followed for 19 years

Objectives: To prospectively determine the association between occupational biomechanical exposures and the incidence of surgically treated carpal tunnel syndrome (CTS) in Swedish male construction workers. **Methods**: A cohort of 203 866 Swedish male construction workers who participated in a national occupational health surveillance programme between 1971 and 1993 were followed for CTS surgery between 2001 and 2019. Age, height, weight, smoking status and construction trade were obtained from programme records. CTS surgery cases were defined using the diagnostic code for CTS and surgical procedure code for peripheral median nerve decompression in the Swedish National Patient Register. Biomechanical exposure estimates were assigned by trade from a job-exposure matrix. The relative risk (RR) of CTS surgery for each biomechanical exposure was assessed with multivariable negative binomial regression modelling. **Results**: The study included 3851 cases and the total incidence rate of CTS surgery was 137.6 cases per 100 000 person-years. Associations were found for upper extremity load (RR 2.6; 95% CI 2.2 to 3.0), repetitive wrist flexion and extension (RR 2.6; 95% CI 2.2 to 3.0), full wrist extension (RR 2.3; 95% CI 1.9 to 2.6), power grip (RR 2.5; 95% CI 2.2 to 2.9), pinch grip (RR 2.0; 95% CI 1.7 to 2.4), handheld tool use (RR 2.3; 95% CI 2.0 to 2.7) and hand-arm vibration exposure (RR 2.3; 95% CI 1.9 to 2.7). **Conclusions**: Occupational upper extremity load and postural exposures were associated with increased risk for surgical treatment for CTS in this large construction worker cohort. Preventive actions and consideration of occupation on assessment are warranted.
Stjernbrandt et al. 2025.
Occupational and Environmental Medicine, vol. 82, no. 6.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Occupational risk factors; carpal tunnel syndrome surgery; cohort study; Sweden; construction workers.
Evidence Level: 4B
Link: https://oem.bmj.com/content/82/6/263.long

Longitudinal study of pulmonary function trends and associated risk factors in iron ore miners

The mining industry involves various processes, including extraction, crushing, milling, stacking, and reclaiming mineral substances. Workers in these environments are at risk of respiratory diseases due to exposure to high concentrations of pollutants, such as respirable dust. This study was conducted on sweepers, supervisors, and office workers of an iron ore Concentrate and Raw pellet production plants. Sampling and analysis of respirable dust, crystalline silica, and iron dust were performed according to NIOSH 0600, NIOSH 7601, and OSHA ID-121 methods, respectively. The values of lung function indices were extracted from personnel medical records over the years of their work experiences. The results showed

that the highest mean concentration of respirable dust, iron, and crystalline silica dust belongs to the sweeper group and the lowest mean concentration belongs to the office group. The reduction rate of pulmonary functions over time was also higher in the sweeper and supervisor groups than in the office group. The effective factors on the pulmonary functions were age, work experience, academic education level, occupational group, cigarette and waterpipe smoking, and type of employment.
Soltanpour et al. 2025.
Scientific Reports, vol. 15, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Iron dust; longitudinal changes; miners; pulmonary functions; risk factors; silica.
Evidence Level: 4B
Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC12480662/

Impact of workplace conflicts and rivalry on low back and neck pain: A cross-sectional study from Latvia

Background: Low back pain (LBP) and neck pain (NP) are major public health concerns and leading causes of disability worldwide. While workplace psychosocial factors have been identified as risk factors, the role of workplace conflicts and rivalry remains underexplored. This study examines the association between hierarchical workplace conflicts, rivalry, and the prevalence of LBP and NP among Latvian employees working with computers. **Methods**: We conducted a cross-sectional study using data from the Work Conditions and Risks in Latvia 2019-2021 survey, which included 1,313 employees who worked with computers for more than two hours per day. Workplace psychosocial factors, including conflicts with managers, coworkers, worker groups, and clients, as well as workplace rivalry, were assessed. Binomial logistic regression was used to calculate adjusted odds ratios (aOR) with 95% confidence intervals (CI), adjusting for age, gender, and education. **Results**: Workplace conflicts were significantly associated with increased odds of LBP and NP. Conflicts with managers increased the odds of LBP (aOR = 1.50, 95% CI 1.12-2.00) and NP (aOR = 1.57, 95% CI 1.06-2.32). Employees experiencing conflicts with coworkers (aOR = 1.67, 95% CI 1.25-2.22), clients (aOR = 1.44, 95% CI 1.07-1.93), and rivalry (aOR = 1.36, 95% CI 1.01-1.84) also had significantly higher odds of LBP. **Conclusions**: Our findings highlight workplace conflicts and rivalry as important psychosocial risk factors for LBP and NP. Addressing these factors through workplace interventions and leadership strategies could contribute to musculoskeletal health promotion.
Paegle et al. 2025.
BMC Public Health, vol. 25, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Health promotion; leadership; low back pain; neck pain; occupational health; psychosocial risks; risk; rivalry; stress; workplace conflicts.
Evidence Level: 4B
Link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24319-2

Male and female workers suffering from chronic low back pain display different interrelationships between the biopsychosocial variables

Objective: To study the biopsychosocial model of chronic low back pain in the workplace and the role of sex in it. **Design**: Cross-sectional nationwide survey in a service company. **Patients**: 256 workers (women 64.1%) reporting chronic low back pain. **Methods**: Variables on biometry, job description, physical activity, pain severity/interference, neuropathic features, and questionnaire-based cognitive and affective parameters were collected. Within each sex group, the interrelationships between variables by Multiple Correspondence Analysis were analysed, followed by cluster analysis. **Results**: In the overall sample, neuropathic features were reported by 28.9% of the patients; the cluster including the high pain disorder modalities (i.e., severity and interference) also included high pain catastrophizing and fear/avoidance towards work, as well as neuropathic features. However, in men, the modalities neighbouring high pain disorder were high anxiety and depression, and low mental quality of life, while in women, they were kinesiophobia, high fear/avoidance towards physical activity and stress at work, and low physical quality of life. **Conclusion**: As there is now a major demand for defining chronic low back pain patients based on their biopsychosocial profile to improve care and prognosis, this study's results indicate the relevance of conducting such phenotyping at an early stage in a working environment, and that it is preferable to construct predictive models for each sex group.

Lanhers et al. 2025.

Journal of Rehabilitatation Medicine, vol. 57.

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

Keywords: Chronic low back pain; male workers; female workers; biopsychosocial.

Evidence Level: 4B

Link: https://medicaljournalssweden.se/jrm/article/view/43450

Could resistance training prevent or improve work-related musculoskeletal disorders among surgeons?

Studies have demonstrated the negative impact that work-related musculoskeletal disorders (WMSDs) have on surgeons. These are also likely to affect some allied healthcare professionals such as interventional radiologists. Problems from WMSDs include pain, diminished technical and cognitive performance, and work absence. These could contribute to burnout, to which surgeons are already vulnerable owing to other working practices such as shift patterns and long hours. WMSDs could negatively affect working performance, and lead to poorer surgical outcomes and patient care. Surgeons are at risk of WMSDs of the neck and back that result from fixed and damaging postures while operating. Some have reduced their operation numbers and working days as result of WMSDs. Theatre ergonomics (e.g. table positioning, operating stools and monitors), intraoperative breaks and stretching may improve WMSDs for some. Strength/resistance training (RT) may be used to prevent or mitigate WMSDs. RT can also enhance general health and concentration, and combat intraoperative fatigue. Low engagement times of moderate-intensity RT of 20 minutes, twice a week, improve neck and back pain from WMSDs. Moreover, RT has been shown to reduce all-cause mortality by up to 15%, increase bone density, improve proprioception and reduce the fear of movement due to pain. Alongside ergonomic improvement and stretching, we recommend RT as an activity to improve general health and WMSDs.

Vijay et al. 2025.

The Annals of The Royal College of Surgeons of England, vol. 107, no. 7.

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

Keywords: Human factors; musculoskeletal pain; patient care; wellbeing.

Evidence Level: 6A

Link: https://pubmed.ncbi.nlm.nih.gov/39435546/

Guiding and Supporting Mental Health and Wellbeing

Mental Health

Interventions based on biofeedback systems to improve workers' psychological well-being, mental health, and safety: Systematic literature review

Background: In modern, high-speed work settings, the significance of mental health disorders is increasingly acknowledged as a pressing health issue, with potential adverse consequences for organizations, including reduced productivity and increased absenteeism. Over the past few years, various mental health management solutions, such as biofeedback applications, have surfaced as promising avenues to improve employees' mental well-being. However, most studies on these interventions have been conducted in controlled laboratory settings. **Objective**: This review aimed to systematically identify and analyze studies that implemented biofeedback-based interventions in real-world occupational settings, focusing on their effectiveness in improving psychological well-being and mental health. **Methods**: A systematic review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. We searched PubMed and EBSCO databases for studies published between 2012 and 2024. Inclusion criteria were original peer-reviewed studies that focused on employees and used biofeedback interventions to improve mental health or prevent mental illness. Exclusion criteria included nonemployee samples, lack of a description of the intervention, and low methodological quality (assessed using the Physiotherapy Evidence Database [PEDro] checklist). Data were extracted on study characteristics, intervention type, physiological and self-reported outcomes, and follow-up measures. Risk of bias was assessed, and VOSviewer was used to visualize the distribution of research topics. **Results**: A total of 9 studies met the inclusion criteria. The interventions used a range of delivery methods, including traditional biofeedback, mobile apps, mindfulness techniques, virtual reality, and cerebral blood flow monitoring. Most studies focused on breathing techniques to regulate physiological responses (eg, heart rate variability and respiratory sinus arrhythmia) and showed reductions in stress, anxiety, and depressive symptoms. Mobile and app-directed interventions appeared particularly promising for improving resilience and facilitating recovery after stress. Of the 9 studies, 8 (89%) reported positive outcomes, with 1 (11%) study showing initial increases in stress due to logistical limitations in biofeedback access. Sample sizes were generally small, and long-term follow-up data were limited. **Conclusions**: Biofeedback interventions in workplace settings show promising short-term results in reducing stress and improving mental health, particularly when incorporating breathing techniques and user-friendly delivery methods such as mobile apps. However, the field remains underexplored in occupational contexts. Future research should address adherence challenges, scalability, cost-effectiveness, and long-term outcomes to support broader implementation of biofeedback as a sustainable workplace mental health strategy.

Ferreira et al. 2025.
Journal of Medical Internet Research, vol. 27.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Biofeedback; breathing techniques; mental health; occupational health; occupational safety; well-being.
Evidence Level: 1A
Link: https://www.jmir.org/2025/1/e70134

Mental health and substance use among international migrant workers in the Association of Southeast Asian Nations (ASEAN) countries: A systematic review and meta-analysis

Previous literature showed that mental health conditions and substance use are prevalent in international migrant workers due to acculturation stress. Given the rapid increase in labour migration within the Association of Southeast Asian Nations (ASEAN) countries, this study aimed to conduct a meta-analysis of the pooled prevalence of mental health conditions and substance use among international migrant workers in ASEAN countries and to identify associated factors. We searched MEDLINE, PubMed, Scopus, and ASEAN Citation Index (ACI) for articles published in English between January 2010 and October 2023. The included outcomes were mental health (depression, anxiety, and post-traumatic stress disorder (PTSD)) and substance use (alcohol, tobacco, and illicit drugs). Study quality was assessed using the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI). Of 19 eligible studies, 18 articles (11 for depression, 5 for anxiety, 1 for PTSD, and 8 for substance use) were included in the meta-analysis. A significant number of studies included in this study targeted Myanmar migrant workers living in Thailand. The pooled prevalence was 34.77% for depression, 37.72% for anxiety, and 24.29% for substance use. Factors associated with mental disorders were younger age, being female, low education and income level, workers in construction and sex industry, while male gender, other substance use, and peer influence are associated with substance use. A high prevalence of mental disorders and substance use among international migrant workers warrants a collective effort by various parties to provide proactive support to prevent and manage mental health conditions and substance use in the ASEAN countries.

Hong et al. 2025.
Global Health Action, vol. 18, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Anxiety; alcohol; depression; illicit drugs; post-traumatic stress disorder; tobacco.
Evidence Level: 1A
Link: https://pubmed.ncbi.nlm.nih.gov/40898952/

Is a problem-solving intervention with workplace involvement for employees on sickness absence due to common mental disorders more effective, than care as usual, in reducing sickness absence days? Results of a cluster-randomised controlled trial in primary health care

Purpose: The aim was to evaluate the effectiveness of a problem-solving intervention with workplace involvement (PSI-WPI) added to care as usual (CAU) in reducing sickness absence days among employees with common mental disorders compared to CAU alone in Swedish primary health care on a monthly basis over 18-months follow-up. **Methods**: We conducted a cluster-randomised controlled trial including 197 employees blinded to allocation (85 PSI-WPI and 112 CAU). As sickness absence data was skewed and over-dispersed, generalised estimating equations was used to enable a comparison between the intervention and control group for each month of the follow-up period. **Results**: The median number of sickness absence days over the 18-month follow-up was 78 days, inter-quartile range (IQR) 18-196 for employees receiving PSI-WPI and 64 days, IQR 18-161 for employees receiving CAU. The time x group generalised estimating equations analysis showed no statistically significant difference in sickness absence days per month. **Conclusion**: The addition of a PSI-WPI to CAU was not more effective in reducing sickness absence days. This may be explained by the primary health care context, lack of specialisation in occupational health and the Swedish social insurance system with specific time limits. **Trial registration:** The trial was registered at ClinicalTrials.gov, identifier: NCT03346395 on January 12th, 2018.

Karlsson et al. 2025.

Journal of Occupational Rehabilitation, vol. 35, no. 3.

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

Keywords: Adjustment disorder; anxiety disorder; depression; primary health care; problem-solving intervention; work-directed intervention.

Evidence Level: 2B

Link: https://link.springer.com/article/10.1007/s10926-024-10229-4

Epidemiology and economic burden of suicide among Brazilian workers: Trends, occupational disparities, and gender differences

Objectives: Suicide among workers represents a significant public health concern with substantial economic implications. This study aimed to analyze temporal trends in suicide cases and estimate the indirect costs of premature mortality among Brazilian workers from 2008 to 2022. **Methods**: We analyzed data from Brazil's Mortality Information System for workers aged 18 to 65 years. Indirect costs were calculated using the Human Capital Approach, considering lost productivity until retirement age (65 years). Sociodemographic characteristics, occupational factors, and regional variations were examined. **Results**: A total of 121 880 suicide cases were identified, showing a 68.35% increase from 2008 to 2022. Males represented 84.65% of cases. The accumulated indirect costs amounted to R$26.31 billion (US$5.04 billion). The estimated lifetime indirect cost was R$71 billion (US$13.6 billion) for men and R$14 billion (US$2.9 billion) for women. Rural workers (16.5%) and construction workers (7.07%) had the highest number of cases, whereas management and judicial system positions showed the highest per-case indirect costs. Cases peaked at age 30, with most deaths occurring at home (60.3%). The South region showed disproportionately high suicide rates relative to its population. **Conclusions**: The significant increase in suicide cases and substantial indirect costs highlight the need for targeted prevention strategies, particularly for young adults entering the workforce and high-risk occupations. The findings emphasize the importance of workplace mental health interventions and occupation-specific prevention approaches, considering both the frequency of cases and their economic impact.

Dos Santos et al. 2025.

Value in Health Regional Issues, vol. 49.

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

Keywords: Cost of illness; mental disorder; mental health; occupational health; suicide.

Evidence Level: 4B

Link: https://www.valuehealthregionalissues.com/article/S2212-1099(25)00068-8/fulltext

Gender differences in work-family conflict and mental health of Swedish workers by childcare responsibilities: Findings from the SLOSH cohort study

Objectives: In Sweden, the number of working-aged women in employment is now almost equal to that of men. While this has many benefits, it presents challenges in organizing work and non-work responsibilities around children, which may impact employees` mental health. **Methods**: Based on the Swedish Longitudinal Occupational Survey of Health (SLOSH) cohort study, we prospectively examined gender differences for the effects of work-family conflict and caring for children on mental health among Swedish workers. Mental health status was assessed using a brief (Hopkins) symptom checklist depression scale. We used information from three waves of data over five years (2014-2018) for 5846 women and 4219 men aged 20-64 at baseline. Linear fixed-effects analyses were performed examining within-person changes in work interfering with family (WFC) and family interfering with work (FWC) and associated changes in depressive symptoms by childcare intensity (0, 1-10, >10 hours/week) and sex. **Results**: Changes in mean scores for WFC and FWC were associated with changes in depressive symptoms for men [no childcaring: WFC 1.31 (95% confidence interval (CI) 1.13-1.49), FWC 0.70 (95% CI 0.43-0.96); childcaring >10 hours/week: WFC 1.39 (95% CI 0.53-2.25), FWC 1.24 (95% CI 0.27-2.21)] and women [no childcaring: WFC 1.57 (95% CI 1.41-1.73), FWC 1.04 (95% CI 0.79-1.30); childcaring >10 hours/week: WFC 2.04 (95% CI 1.36-2.73), FWC 1.57 (95% CI 0.82-2.32)]. **Conclusion**: Higher levels of WFC and FWC are associated with increased depressive symptoms in both men and women. The impact is greater for those with greater childcaring responsibilities intensity.

Taouk et al. 2025.
Scandinavian Journal of Work, Environment and Health, vol. 51, no. 5.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Work-family conflict; mental health; gender differences.
Evidence Level: 4B
Link: https://www.sjweh.fi/article/4231

Job satisfaction, burnout, and safety behavior in air traffic controllers: A mediation analysis and decision tree insights

Introduction: This study aims to explore the mediating role of burnout in the relationship between job satisfaction and safety behavior among air traffic controllers (ATCs), and to identify the most influential factor affecting ATCs' safety behavior using a decision tree model. **Methods**: Data were collected from 357 ATCs using established questionnaires measuring job satisfaction, burnout, and safety behavior. Bootstrap analysis was employed to examine the mediating effect of burnout, and a decision tree model was applied to determine the key factors influencing safety behavior. **Results**: The bootstrap analysis revealed that burnout partially mediated the relationship between job satisfaction and safety behavior, accounting for 40% of the total effect. The decision tree model identified burnout as the primary predictor of safety behavior, followed by job satisfaction and other factors. **Discussion**: These findings underscore the critical role of burnout in influencing ATCs' safety performance. Enhancing safety behavior should prioritize targeted interventions to reduce burnout, in addition to addressing job satisfaction and other contributing factors.

Li et al. 2025.
Frontiers in Public Health, vol. 13.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Air traffic controllers; aviation safety; decision tree model; mediating effect; safety behavior.
Evidence Level: 4B
Link: https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1626328/full

The relationship between occupational stress and burnout among primary and secondary school physical education teachers: Evidence from multiverse-style analysis and diary method

Background: To investigate the relationship between occupational stress and burnout among primary and secondary school physical education (PE) teachers and its underlying mechanisms. **Method**: Study 1 utilized a large cross-sectional sample of 4,397 teachers and employed multiverse-style analysis to examine the robustness of the relationship between occupational stress and burnout. Study 2 applied a 21-day diary

method to a sample of 324 teachers to explore the intrinsic mechanisms through which occupational stress affects burnout. **Results**: Study 1 found a positive and robust relationship between occupational stress and burnout. Study 2 revealed that rumination and negative emotions act as a chain mediation mechanism in the influence of occupational stress on burnout. **Conclusion**: These findings have significant practical and theoretical implications for improving the quality of physical education and students' physical fitness.
Li et al. 2025.
BMC Psychology, vol. 13, no. 1.
User License: *Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Burnout; diary method; multiverse-style analysis; occupational stress; physical education teachers.
Evidence Level: 4B
Link: https://bmcpsychology.biomedcentral.com/articles/10.1186/s40359-025-03351-2

Recognising occupational PTSD as a statutory occupational disease: A step forward for emergency responders' mental health in China

This commentary discusses China's recognition of occupational post-traumatic stress disorder (PTSD) as a statutory occupational disease, a landmark advancement in mental health support for emergency responders. The policy mandates legal protections, including access to diagnosis, treatment, and compensation, for workers affected by occupational trauma. However, the framework is currently limited to specific professions, such as police officers, healthcare workers, firefighters, and rescue personnel. Additionally, it requires documented trauma exposure during duty, which may exclude workers experiencing cumulative stress from chronic stressors. Furthermore, fragmentation between mental health and occupational health sectors in China impedes the formation of multidisciplinary teams essential for effective PTSD prevention and intervention. To enhance the framework's efficacy, the authors recommend expanding coverage to include other high-risk professions (e.g. journalists and social workers), improving access to mental health services (particularly in rural areas), implementing preventive measures such as stress management training, and fostering collaborative partnerships across sectors. These strategies are essential for strengthening China's occupational mental health provisions.
Zhong et al. 2025.
European Journal of Psychotraumatology, vol. 16, no. 1.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: China; Occupational post-traumatic stress disorder; emergency responder; legislation; statutory occupational disease.
Evidence Level: 5B
Link: https://pubmed.ncbi.nlm.nih.gov/40952013/

Characteristics of mental disorders among education and learning-support workers in 119 compensated cases in Japan

This study aimed to investigate the circumstances, characteristics, and background factors of mental disorders within the education and learning-support services, which is known for the frequent occurrence of mental disorders from overwork and poor psychosocial work environment. The study analyzed 119 cases of mental disorders and suicides in the education and learning-support services from fiscal years 2010 to 2019 on the database constructed by the Japan Research Center for Overwork-Related Disorders. The results exhibit that of 119 cases, 56 cases (47.1%) involved male employees while 63 cases (52.9%) involved female employees. From fiscal years 2010 to 2019, there were 43 cases of psychological stress related to work among males and 55 among females. The issue of "interpersonal relationship" was significantly higher in the education and learning-support services than in other industrial workers. Within the category of "interpersonal relationship" the specific issue of being "(severely) harassed, bullied, or assaulted" was especially prevalent (10 cases for males and 15 cases for females). Moreover, male employees reported many instances of suicide attempts, and their first attempt tended to lead to a completed suicide. Therefore, it is important to promote measures against harassment, bullying, and suicide in education and learning-support services.

Takahashi et al. 2025.
Industrial Health, vol. 63, no. 5.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Education and learning-support services; harassment; mental disorders; mental health; suicide.
Evidence Level: 5B
Link: https://www.jstage.jst.go.jp/article/indhealth/63/5/63_2024-0101/_article

Bullying, Harassment and Occupational Violence

Workplace-sexual-harassment victimization and employee wellbeing among LGBTQ+ and non-LGBTQ+ employees

Workplace sexual harassment represents a critical risk to contemporary organizations, with evidence indicating that its prevalence is increasing. Research has consistently demonstrated that workplace-sexual-harassment victimization exerts negative impacts on employees' health and wellbeing. However, no empirical studies have examined how these impacts vary by lesbian, gay, bisexual, trans, and queer (LGBTQ+) status. In this study, we leverage a unique survey dataset (2022 Australian Workplace Equality Index Employee Survey, n = 44,943) and random-intercept, multilevel regression models to estimate the relationships between workplace-sexual-harassment victimization and employee wellbeing. Expanding on earlier studies, we consider how these relationships vary between LGBTQ+ and other employees, across domains of employee wellbeing, and with the timing of sexual harassment. Our results reveal large, negative, and statistically significant impacts of sexual harassment on employee wellbeing. The impacts are comparatively larger for LGBTQ+ employees and recent harassment experiences, and manifest across all domains of employee wellbeing. These findings underscore the urgent need for holistic programs to combat workplace sexual harassment, and the importance of connecting these programs with diversity and inclusion initiatives.
Perales et al. 2025.
Journal of Interpersonal Violence, vol. 40.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Australia; LGBTQ+; health; sexual harassment; wellbeing; workplaces.
Evidence Level: 4A
Link: https://journals.sagepub.com/doi/10.1177/08862605241285994

Workplace violence and fear of violence: An assessment of prevalence across industrial sectors and its mental health effects

Objectives: This study aimed to (i) examine variance in the prevalence of workplace violence and fear of violence in the United Kingdom by industrial sector and (ii) determine the mental health effects thereof using longitudinal data. **Methods**: We used the United Kingdom Household Panel Study (UKHLS), a nationally representative survey with mental health indicators collected annually allowing us to determine common mental disorders (CMD) at baseline, one year prior and one year later. Using weighted logistic regression and lagged dependent variable regression, we examined prevalence of violence and fear of violence by sector and the effect of violence on CMD risk. We supplemented our analyses with the views of those with lived experience. **Results**: Workers employed in public administration and facilities had the highest risks of workplace violence, with predicted probabilities (PP) of 0.138 [95% confidence interval (CI) 0.116-0.160], and these were not statistically different from the second highest sector of health, residential care, and social work (PP 0.118, 95% CI 0.103-0.133). Workplace violence increased CMD risk [adjusted odds ratio (ORadj) 1.400, 95% CI 1.182-1.658] as did fear of violence at work (ORadj 2.103, 95% CI 1.779-2.487), adjusting for prior CMD. Moreover, the effect of violence and fear of violence on CMD remained when we investigated CMD one year later. **Conclusions**: A high prevalence of workplace violence and fear of workplace violence was found in multiple different industrial sectors - >1 in 10 workers were exposed to

violence in the last 12 months in 30% of sectors and >1 in 20 workers were exposed in 70% of sectors. Both violence and fear of violence were associated with enhanced CMD risk at baseline and one year later.
Gash et al. 2025.
Scandinavian Journal of Work, Environment and Health, vol. 51, no. 5.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Workplace; violence; fear; mental health.
Evidence Level: 4B
Link: https://www.sjweh.fi/article/4230

Relationship between workplace violence and depressive symptoms among emergency department physicians in China: The mediating role of occupational burnout

Background: Workplace violence (WPV) was a global public health issue worldwide. Given the specificity of emergency department physicians' professional roles, the incidence of WPV was significantly higher than that of practitioners in other healthcare groups. Investigating the association between exposure to WPV and psychological health can provide a scientific basis for managers to implement precise interventions on violent incidents, thereby effectively reducing the adverse impacts of WPV. **Methods**: A multi-stage random sampling method was employed to conduct a questionnaire survey among 14 848 emergency department physicians across 31 provincial-level administrative regions in China from July to September 2019. This survey utilised the WPV Scale, the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), and the Center for Epidemiological Studies Depression Scale (CES-D) to investigate the levels of WPV, burnout, and depressive symptoms among respondents. Data analysis were performed using STATA 17.0 and Amos 26.0 software. **Results**: A total of 90.40% of emergency department physicians reported experiencing at least one incident of WPV in the past year. The mean score for depressive symptoms was 16.80 ± 14.78, and the mean score for burnout was 82.94 ± 26.11. The correlation coefficients between WPV and depressive symptoms, WPV and job burnout, and depressive symptoms and job burnout were 0.444, 0.347, and 0.562, respectively (all $P < 0.01$). Structural equation analysis indicated that the total effect of WPV on depressive symptoms was 0.471, with a mediating effect of burnout at 0.421, accounting for 89.38% of the total effect. **Conclusions**: Emergency department physicians had a severe level of depressive symptoms and burnout, with burnout playing a mediating role between WPV and depressive symptoms. Therefore, future policy efforts are warranted to build a supportive work environment for emergency department physicians and consequently enhance their well-being.
Zhang et al. 2025.
Journal of Global Health, vol. 19.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Workplace violence; depressive symptoms; emergency department; China.
Evidence Level: 4B
Link: https://jogh.org/2025/jogh-15-04259

Psychosocial Issues

The effects of prenatal psychosocial work stress on adverse pregnancy outcomes: A comprehensive systematic review and meta-analysis

Objective: Psychosocial work stress is a predictor of adverse pregnancy outcomes. However, there is limited comprehensive and conclusive evidence available on the associations between psychosocial work stress and adverse pregnancy outcomes. This systematic review and meta-analysis paper addressed this gap by synthesizing the available evidence. **Methods**: Studies were retrieved from six electronic databases that include pregnant mothers as study population, psychosocial work stress as variable exposure, and adverse pregnancy outcomes - including pregnancy loss, gestational hypertension and diabetes mellitus, preterm birth, low birth weight, and low fetal growth - as the outcomes of interest. The quality and certainty of evidence were assessed. Depending on the study characteristics, either a fixed or random effect model was employed. Heterogeneity was assessed using I2 statistics, and further subgroup and sensitivity analysis was employed as appropriate. **Results**: A total of 26 studies (N=1 346 686) were included. Psychosocial work stress decreased birth weight by 77.09 grams, increased the occurrence of preeclampsia by 50%, and preterm birth by 18% with moderate certainty of evidence, and increased the chance of pregnancy loss by 20% with low certainty of evidence. With a low grading scale, low birth weight and small-for-gestational-age had no significant association with psychosocial work stress. **Conclusions**: Psychosocial work-stress increased the risks of pre-eclampsia, preterm birth, and pregnancy loss, and decreased fetus weight. Therefore, occupational therapists, employers, policy makers, and relevant stakeholders should work together to minimize the impact of psychosocial work-stress on the mother and baby.

Admas et al. 2025.
Scandinavian Journal of Work, Environment and Health, vol. 51, no. 5.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Psychosocial stress; pregnancy; prenatal; adverse pregnancy outcomes.
Evidence Level: 1A
Link: https://www.sjweh.fi/article/4236

Exploring the trauma experiences of people working in homelessness: Mixed-methods systematic review

Objectives: Homelessness is a global public health concern which extends to the health and well-being of people working in homelessness, and this mixed-methods systematic review aims to explore their experiences of trauma. **Design**: The review protocol followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidance and a mixed-methods convergent segregated approach, a systematic search for qualitative and quantitative research across seven databases. **Data sources**: CINAHL, MEDLINE, PsychINFO, Psychology Database, Public Health Database, Web of Science and PubMed, searched from inception until May 2023. **Eligibility criteria:** A total of 22 articles met the eligibility criteria and were retained for inclusion (12 quantitative, 13 qualitative and 3 mixed methods). The methodological quality was assessed using the Mixed Methods Appraisal Tool, and confidence in the findings was assessed via GRADE-CERQual. **Data extraction and synthesis**: Peer-reviewed empirical research and relevant grey literature, available in English, were considered for inclusion. Data were synthesised per the Joanna Briggs Institute guidance on mixed-methods systematic review synthesis, drawing upon the Substance Abuse and Mental Health Services Administration (SAMHSA) definition of trauma. **Results**: The methodological quality of studies varied due to unclear reporting on sample representativeness and confounder control, particularly in quantitative studies. Despite this, a high prevalence of trauma experiences was evidenced, with a significant number of participants across this sector encountering traumatic 'events', 'experiences' and 'effects', as conceptualised by SAMHSA, stressing the urgent need for systemic-level change. **Conclusions**: This review provides an important evidence base for future research, policy and practice, and discusses the need for psychologically informed practice, to prevent and alleviate trauma experiences across homelessness, along with nuanced, inclusive and consistent measurements of trauma.

Camp et al. 2025.
BMJ Open, vol. 15, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Health equity; mental health; organisation of health services; public health; psychological stress; suicide & self-harm.
Evidence Level: 1A
Link: https://bmjopen.bmj.com/content/15/9/e087270.long

Evidenced interventions supporting the psychological wellbeing of disaster workers: A rapid literature review

This rapid literature review was conducted to better understand the evidence base for interventions aimed at improving psychological well-being in disaster response workers. Three databases were searched: MEDLINE, APA PsycArticles, and Embase. Grey literature reviewed included results of a Google Scholar search and organisation-recommended reports and articles. Of the 959 screened records, 25 studies were included, 13 of which evidenced the benefit of the studied intervention, and two included screening tools to identify at-risk workers. The results showed that evidence-based interventions exist to support disaster response workers to varying degrees in terms of perceived stress, anxiety, depression, post-traumatic stress symptoms, burnout, sleep quality, somatic symptoms, irrational performance beliefs, and emotional and social well-being. Identified interventions featured neurofeedback, psychoeducation, mindfulness, reflective practice, and adjustments to cognitions or behaviours. Interventions varied in delivery (online with pre-recorded content, asynchronous, and guided learning), context (delivered to groups, individuals, and in work or private settings), and facilitator (psychologists, mental health practitioners, and medical doctors). Several interventions improved aspects of psychological well-being in disaster response workers; however, most findings were produced by quasi- or non-experimental designs, suggesting further research is required to clearly ascertain their benefits.

Deans et al. 2025.

International Journal of Environmental Research and Public Health, vol. 22, no. 9.

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

Keywords: Crisis; disaster; emergency; emergency services; frontline workers; intervention; mental health; psychological health; psychological well-being; support.

Evidence Level: 1B

Link: https://www.mdpi.com/1660-4601/22/9/1454

Occupational stress and associated factors among couriers: A cross-sectional study

Background: In all spheres of life, occupational stress has steadily emerged as a major influence on people's physiology and psychology. There is currently little research on couriers as a high-risk group for occupational stress. **Objective**: This study aims to explore the occupational stress levels among couriers in Shenzhen, China, and to analyze the contributing factors. The findings will provide a reference for managing and preventing occupational stress, thereby enhancing the occupational health and well-being of this workforce. **Methods**: This study enrolled 1500 couriers through convenience sampling from June 2022 to December 2023. Data on demographic, lifestyle, and work-related characteristics were collected through the online questionnaire survey. Occupational stress was assessed using the Job Content Questionnaire (JCQ). A logistic regression model was employed to calculate odds ratios (ORs) and 95% confidence intervals (CIs) to examine the relationships between occupational stress and work-related variables, such as tenure, job role, weekly hours worked, and occupational health literacy. **Results**: The prevalence of occupational stress among couriers was found to be 49.2%. Logistic regression analysis showed that couriers with a college degree or higher education level, alcohol consumption, irregular meal patterns, sedentary lifestyle, parcel delivery and collection couriers, working over 56 h per week, limited social support, and inadequate knowledge and practices regarding occupational health were more susceptible to occupational stress. Furthermore, individuals working more than 56 h weekly exhibited a 1.81 times higher risk of experiencing occupational stress compared to those working below 40 h per week [OR (95% CI) = 1.81 (1.17, 2.83)]. The couriers those deliver and collect parcels demonstrated a 1.62-fold higher risk of occupational stress compared with other couriers [OR (95% CI) = 1.62 (1.20, 2.19)]. Individuals with occupational health knowledge exhibited a 34% reduced risk of occupational stress [OR (95% CI) = 0.66 (0.53, 0.83)], while those practicing occupational health behaviors exhibited a 47% risk reduction [OR (95% CI) = 0.53 (0.39, 0.71)]. **Conclusions**: Couriers are susceptible to elevated levels of occupational stress. Urgent action is required to address the problem of occupational stress among couriers. It is advised that the government, businesses, and trade unions work together to create a comprehensive "prevention-intervention-guarantee" system for occupational health protection.

Zhu et al. 2025.

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

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

Keywords: Couriers; occupational health literacy; occupational stress; work-related characteristics.

Evidence Level: 4B

Link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24417-1

Shades of green and transformational leadership: Predicting employees' green creativity and green work engagement at work

As the tourism sector faces increasing pressure to reduce its environmental footprint, employees are emerging as vital agents of sustainable transformation. Employing the stimuli-organism-response (SOR) framework and data collected from 324 employees, this study investigates the psychological processes underlying green work engagement. Covariance-based structural equation modeling revealed that both green attitudes and resource commitment are significant predictors of individual green values, which, in turn, are positively associated with green creativity and work engagement. Moreover, green creativity was found to mediate the relationship between individual green values and work engagement. In contrast, the moderating effects of green intrinsic motivation on these relationships were not supported. These findings extend the understanding of green organisational behaviour and sustainability in the hospitality and tourism context by revealing novel links among green attitudes, resource commitment, and leadership practices. It adds to the discourse on the roles of intrinsic motivation and individual green values in enhancing engaged and innovative environmental practices. These results offer valuable insights for policymakers, environmental researchers and industry practitioners looking to increase their sustainable performance.

Sharma et al. 2025.

Acta Psychologica, vol. 259.

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

Keywords: Green attitude; green creativity; green engagement; green inclusive leadership; green intrinsic motivation; individual green value; resource commitment.

Evidence Level: 4B

Link: https://www.sciencedirect.com/science/article/pii/S0001691825007061?via%3Dihub

Reverse exploration: how employees' perception of a high-commitment work system relates to their work-family conflict

Background: The rapidly evolving and competitive professional environment has significantly intensified the problem of work-family conflict (WFC) among employees. With the advancement of China's economy and society, this conflictual relationship has gained prominence and has exerted various detrimental effects on individuals and businesses. Based on the job demand-resource framework, this study investigated how employees' perception of a high-commitment work system (WFC) relates to their work-family conflict, with job embeddedness (JE) as a mediator, and examined the moderating role of gender. **Methods**: A convenience sampling questionnaire survey was conducted among employees in Hainan Province, China, yielding 599 valid responses. Hayes' PROCESS software was used to validate the proposed hypotheses. **Results**: Employees' perceived HCWSs are positively correlated with WFC, and JE partially mediated the relationship between perceived HCWSs and WFC. Additionally, gender moderated the latter part of the mediation pathway, specifically the relationship between JE and WFC. **Conclusion**: Effective management of human resource systems is crucial in alleviating employees' WFC stemming from HCWSs and JE. Additionally, gender equality policies should be implemented to ensure equal career opportunities and family support for female employees. These measures will not only enhance employees' satisfaction and well-being but also contribute to the sustainable development of organizations.

Chen et al. 2025.

BMC Psychology, vol. 13, no. 1.

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

Keywords: Gender; job demands–resources (jd-r) model; job embeddedness; job satisfaction; positive psychology; well-being.

Evidence Level: 4B

Link: https://bmcpsychology.biomedcentral.com/articles/10.1186/s40359-025-03385-6

Job satisfaction as a moderator between organizational culture and turnover intention among Malaysian police officers

Turnover among police officers poses a serious challenge to law enforcement agencies by affecting operational stability and public trust. While organizational culture and job satisfaction are key factors influencing turnover intention, their combined effects have not been widely studied in policing contexts. This study explores whether job satisfaction moderates the relationship between organizational culture and turnover intention among Malaysian police officers. Although both variables were significantly related to turnover intention, the moderation effect of job satisfaction was not statistically significant. A cross-sectional survey was conducted among 373 officers from various departments of the Royal Malaysia Police. Participants completed validated instruments measuring organizational culture, job satisfaction, and turnover intention. Data were analysed using Hayes' PROCESS Macro (Model 1) in SPSS to test for moderation effects through hierarchical regression. The analysis revealed that both organizational culture and job satisfaction were significantly and negatively associated with turnover intention, indicating that higher levels of these variables correspond to lower intentions to leave the organization. Officers who perceived stronger organizational culture and reported higher job satisfaction were less likely to express intent to leave. However, job satisfaction did not significantly moderate the relationship between organizational culture and turnover intention ($p = .117$), indicating that the influence of organizational culture on turnover intention remained stable regardless of satisfaction levels. The findings highlight the importance of fostering a supportive organizational culture to reduce turnover intention among police officers. While job satisfaction independently contributes to retention, it does not significantly alter the impact of organizational culture. These results suggest that efforts to improve retention in policing should focus on structural and cultural reforms in addition to enhancing job satisfaction.

Che Yusoff et al. 2025.
PLoS One, vol. 20, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Organizational culture; turnover; police officers; job satisfaction.
Evidence Level: 4B
Link: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0331458

Mediation effects of job satisfaction in the relationships between job characteristics and the outcomes burnout and work engagement among Dutch judges

This study offers a novel approach to understand what predicts work-related well-being outcomes in Dutch judges (i.e., burnout and work engagement): are the job characteristics themselves important or rather the satisfaction with them? More specifically, we investigated the mediating effects of job satisfaction on the relationships between job characteristics (work pressure and social support) and burnout and work engagement in 257 Dutch judges (aged 34-67 years old; 64 % female). The results support mediation effects in all tested relationships. All assumed antecedents have a direct, and also an indirect relation with burnout and work engagement, respectively, via job satisfaction. Increased work pressure is related to decreased job satisfaction, leading to higher levels of burnout, and more social support is related to more job satisfaction, resulting in increased work engagement. Results indicate that not only the perception of job characteristics (i.e., the perception of the amount of work pressure and social support), but especially the evaluation of the job characteristics (i.e., job satisfaction) explains the risk for burnout and work engagement. Thus, assessing and keeping track of Dutch judges' judgments on their levels of work pressure and social support but especially their job satisfaction, can give courts more clarity how judges evaluate their work conditions, thereby offering opportunities to prevent burnout, enhance work engagement, and promote well-being at work.

Hagen et al. 2025.
Acta Psychologica, vol. 259.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Burnout; job satisfaction; judges; mediation; social support; work engagement; work pressure.
Evidence Level: 4B
Link: https://www.sciencedirect.com/science/article/pii/S0001691825007140?via%3Dihub

Associations between stress level, environment, and emotional and behavioral characteristics in service sector employees

Background: The prevalence of stress-related health issues is becoming increasingly significant. This study aimed to examine the relationships between work stress, home stress, overall stress, and individual behavioral and perceptual characteristics among middle-aged employees in the service sector. **Methods**: Physical activity, diet, and perceptions were assessed using the WellBeNet application (2.10.2, INRAE, Clermont-Ferrand, France) while perceived stress levels were evaluated through an online questionnaire during a one-week period. The associations between stress levels and individual and behavioral characteristics were examined using multiple linear regressions and analyses of variance. **Results**: General stress was significantly influenced by both work and home stress. Home stress was positively correlated with the perception of one's silhouette in red, the increasing consumption of dairy products, and the decreasing consumption of vegetables. Work stress was inversely correlated with age and positively correlated with body shape. **Conclusions**: Our study identified various context markers of stress-including age, body shape, food intake, and color of the silhouette. These markers could be used in subsequent intervention studies to demonstrate causal links.

Rousset et al. 2025.

International Journal of Environmental Research and Public Health, vol. 22, no. 9.

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

Keywords: Digital recordings; emotion; food intake; overweight; perceived stress; physical activity; tertiary sector employee.

Evidence Level: 5B

Link: https://www.mdpi.com/1660-4601/22/9/1390

Fostering Work Participation

Return to Work

Return to work trajectories of swedish employees on sick-leave due to common mental disorders

Objectives: Recent research has emphasized that return to work (RTW) is a dynamic, gradual and often uneven process with a great degree of individual variation. This study aimed to identify RTW trajectories of Swedish employees on sick-leave due to common mental disorders (CMDs). The second aim was to explore which demographic, employment, health-related and work environment characteristics predicted RTW trajectory membership. **Methods**: Data comes from two 2-armed cluster-randomized controlled trials (RCT) with a 12-month follow-up. A participative problem-solving intervention aimed to reduce sick-leave was compared to care as usual (CAU) involving any kind of work-directed interventions. Participants on sick-leave due to CMDs at baseline (N = 197) formed the study sample. Latent growth mixture modeling and logistic regression were the main analytical approaches. **Results**: Five distinct RTW trajectories of Swedish employees were identified: Early RTW (N = 65), Delayed RTW (N = 50), Late RTW (N = 39), Struggling RTW (N = 21) and No RTW (N = 22). RTW trajectories differed consistently with regard to previous sick-leave duration and social support at work. More unique predictors of RTW trajectories included gender, rewards at work, work performance impairment due to health problems, home-to-work interference and stress-related exhaustion disorder. **Conclusion**: The study may have important clinical implications for identifying patients belonging to a particular RTW trajectory. Knowledge on the modifiable work environment factors that differentiated between the RTW trajectories could be useful for designing effective workplace interventions, tailored to particular needs of employees with CMDs. However, in a first step, the results need to be replicated.**Trial registration**: ClinicalTrials.gov NCT02563743 NCT3346395.

Toropova et al. 2025.

Journal of Occupational Rehabilitation, vol. 35, no. 3.

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

Keywords: Common mental disorders; return to work; trajectories; work environment.

Evidence Level: 2B

Link: https://link.springer.com/article/10.1007/s10926-024-10216-9

A prospective study of predictors of return to work after surgery for ulnar nerve entrapment

Ulnar nerve entrapment at the elbow (UNE) is the second most common compression neuropathy in the upper limb. Immediate return-to-work (RTW) after surgery is seldom possible due to restrictions and recovery demands. We aimed to explore RTW after UNE surgery and investigate factors contributing to variations. A prospective study with patients undergoing primary UNE surgery was conducted. Treatment decisions were based on a novel five-grade clinical scale. In total, 65 patients (25 women and 40 men) with a mean age of 51 ± 16 years were included. Simple decompression was the predominant procedure (n = 57, 88%). Manual laborers (n = 28, 43%) had the longest sick leave (7 weeks, IQR [3]) within the working population (n = 49) compared to non-manual laborers (4 weeks, IQR [6]; p = 0.003). Manual labor, smoking, and preoperative pain (evaluated with the Swedish version of the Patient-Rated Ulnar Nerve Evaluation, PRUNE-S) predicted prolonged sick leave. The type of surgery did not predict RTW variations in the multivariate linear model itself but modified the impact of other predictors. In conclusion, patients with surgically treated UNE have varying sick leave needs, influenced by individual and work-related factors. Incorporating biopsychosocial aspects should be a focus of further research in UNE management.

Giöstad et al. 2025.

Scientific Reports, vol. 15, no. 1.

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

Keywords: Return to work; ulnar nerve entrapment.

Evidence Level: 4B

Link: https://www.nature.com/articles/s41598-025-21589-z

Predictive value of disability scoring systems for return-to-work outcomes in hand and forearm injuries

Background: Predicting return-to-work (RTW) outcomes following upper extremity trauma is crucial for optimizing patient care, guiding rehabilitation, and reducing the socioeconomic burden. Although several disability scoring systems have been proposed to assess injury severity, their ability to estimate RTW status and duration remains underexplored. This study aimed to evaluate the predictive value of the Modified Hand Injury Severity Score (MHISS), Upper Extremity Disability Rate (UEDR), and Total Body Disability Rate (TBDR) for RTW outcomes in patients with hand, wrist, and forearm injuries. **Methods**: A retrospective cross-sectional study was conducted on 69 patients who presented to the Forensic Medicine Department of Ondokuz Mayıs University between 2020 and 2024. Eligible participants were adults with documented hand, wrist, or forearm injuries and complete treatment records, including MHISS scoring. Demographic data, injury characteristics, and disability rates (UEDR, TBDR) were collected. Statistical analyses included Spearman correlation, receiver operating characteristic (ROC) analysis, and logistic regression to assess associations between scoring systems and RTW status and duration. **Results**: The median MHISS score was 20.0, with corresponding UEDR and TBDR values of 3.0% and 2.0%, respectively. Occupational injuries, observed in 37.7% of cases, were associated with significantly higher disability scores (p<0.05). ROC analysis demonstrated strong predictive ability for MHISS (area under the curve [AUC]: 0.886), UEDR (AUC: 0.903), and TBDR (AUC: 0.897) in identifying RTW status. While MHISS effectively predicted RTW status, it did not correlate with RTW duration (p=0.082). In contrast, UEDR and TBDR showed weak but statistically significant correlations with RTW duration (r=0.295 and r=0.296, respectively). Multivariate logistic regression did not identify any independent predictors of RTW. **Conclusion**: Disability scoring systems such as MHISS, UEDR, and TBDR are useful tools for predicting whether patients will return to work following hand and forearm injuries. However, their ability to estimate the duration of work absence is limited. Future research should integrate psychosocial, occupational, and rehabilitation-related variables to develop more comprehensive models for RTW prognosis.

Cankurt Ayar et al. 2025.

Turkish Journal of Trauma and Emergency Surgery, vol. 31, no. 9.

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

Keywords: Return to work; forearm injuries.

Evidence Level: 4B

Link: https://www.tjtes.org/jvi.aspx?un=UTD-61475&volume=31&issue=9

Return to work following hip or knee arthroplasty: A one-year prospective cohort study in participants with direct referral from hospital to occupational health care services

Purpose: In a new Finnish Coordinated Return to Work (CRTW) model, patients are referred to occupational health care after hip or knee arthroplasty. This study evaluated the CRTW model's effect on return to work (RTW), activities used in occupational health care and in the workplace, and the patient- and work-related factors affecting early RTW. **Methods**: 209 participants with occupational health care service underwent primary hip (THA) or total/unicondylar knee (KJA) arthroplasty and completed self-reported questionnaires after arthroplasty and at time of RTW. Factors affecting RTW, and the roles of occupational health care and the workplace in RTW were evaluated. Time to RTW was determined as days between the arthroplasty and RTW. **Results**: Mean time to RTW was 69 days after THA and 87 days after KJA. For easing RTW, work arrangements were made for 56% of the participants. The most utilized adjustments of work were enabling remote work and arranging limitations in work tasks. Participants with earlier RTW had lower physical workload, higher professional status and motivation to work, less pre-arthroplasty sick leave, and more positive personal expectations about the time to RTW compared to participants with later RTW ($p < 0.001$ for all). The linear regression and dominance analyses showed participants' own expectations and pre-arthroplasty sick leave as the strongest factors affecting time to RTW. **Conclusions**: The CRTW model seems to shorten time to RTW after THA and KJA. Occupational health care and workplace play important roles in supporting RTW. Patients' own expectations should be noted when giving pre-arthroplasty information.

Kangas et al. 2025.

Journal of Occupational Rehabilitation, vol. 35, no. 3.

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

Keywords: Hip arthroplasty; knee arthroplasty; occupational health care; return to work; sick leave; workplace.

Evidence Level: 4B

Link: https://link.springer.com/article/10.1007/s10926-024-10218-7

Does knee arthroplasty have a beneficial effect on return to work in patients with knee osteoarthritis who receive long-term disability benefits in the netherlands?

Purpose: Optimal timing of knee arthroplasty (KA) is complex: operating at a younger age increases life time risk of revision, while delay results in an increased risk of job loss. This study evaluates whether disability benefits recipients due to knee osteoarthritis have an increased odds of returning to work (RTW) following KA. **Methods**: A retrospective cohort study was performed among long-term disability benefits recipients due to knee osteoarthritis using data of the Dutch Employee Insurance Agency. Logistic regression assessed whether recipients with KA had a higher odds of RTW in 10 years following start of disability benefits, compared to those without KA. **Results**: A total of 159 participants were included. During 10-year follow up, 42% had received KA and 37% had returned to work. No association was observed between KA and RTW (OR 1.39, 95% CI 0.62-3.12). Prognostic factors for RTW were being the main breadwinner (OR 7.93, 95% CI 2.95-21.32) and classification as 100% work disability (OR 0.20, 95% CI 0.09-0.45). **Conclusions**: KA has no beneficial effect on RTW among patients with knee osteoarthritis granted long-term disability in the Netherlands. For RTW, KA is probably best performed within the two years of paid sick leave before long-term disability is assessed in the Netherlands.

Cheng et al. 2025.

Journal of Occupational Rehabilitation, vol. 35, no. 3.

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

Keywords: Arthroplasty; disability; insurance; knee; osteoarthritis; prognosis; replacement; return to work; sick leave.

Evidence Level: 4B

Link: https://link.springer.com/article/10.1007/s10926-024-10234-7

Factors influencing return to work among women with acquired brain injury

Purpose: Research indicates that women with brain injury have a higher risk of not resuming their work roles. This study investigates the influence of sociodemographic, impairment-related and environmental factors on the return-to-work outcomes of women with acquired brain injury in Cape Metropolitan, South Africa. **Methods**: A cross-sectional survey was conducted among 139 women aged 18-65 with acquired brain injury in Cape Metropolitan, South Africa. Participants were conveniently sampled, and the Work Rehabilitation Questionnaire was used for data collection. Data were analysed using IBM SPSS Statistics Version 26, focusing on sociodemographic, impairment-related and environmental factors influencing return to work outcomes. **Results**: Women with acquired brain injury who participated in this study yielded a postinjury return to work rate of 61.2%. Older women were less likely to return to work (odds ratio: 0.905). Environmental support, particularly from workplace supervisors or managers, significantly enhanced RTW (odds ratio: 5.660). Marital status, impairment-related restrictions, type of vocational intervention and family support were not significant predictors of return to work. **Conclusion**: These results highlight the necessity for multidimensional and integrative RTW programmes that address both personal and systemic barriers. Such programmes are essential to promoting sustained economic participation and improving the quality of life for women with ABI.

Darries et al. 2025.

Occupational Therapy International, vol. 4.

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

Keywords: Acquired brain injury; client-centred; disability and employment; rehabilitation outcomes; vocational rehabilitation.

Evidence Level: 4B

Link: https://onlinelibrary.wiley.com/doi/10.1155/oti/9978566

Cognitive performance is associated with return to work after ischemic stroke in young adults: The ODYSSEY study

Introduction: Limited data exist on cognitive performance and return to work after ischemic stroke, especially in patients under 50 years. We investigated whether cognitive performance in the subacute phase after ischemic stroke in young adults was associated with unemployment and the inability to retain their jobs among those who returned to work. **Patients and methods**: We conducted a multicenter prospective cohort study between 2013 and 2021, enrolling patients aged 18-49 years with first-ever ischemic stroke. Cognitive assessments were performed within 6 months following the index event, covering seven cognitive domains. We categorized patients with cognitive impairment (Z-score < -1.5 on a domain) and as no/mild or major vascular cognitive disorder (VCD; Z-score < -2.0 in one or more domains). Cognitive performance and other predefined characteristics were chosen to identify factors associated with unemployment and, among patients who returned to work, the inability to maintain employment. **Results**: Of 525 patients (median age 44.3 [IQR 38.0-47.4] years; 243 women [46.3%]); median follow-up of 6.6 [IQR 4.5-8.2] years), 426 patients (81.1%) returned to work. Sixty-five patients (15.3%) were unable to maintain employment. In multivariable logistic regression analysis, major VCD (OR = 2.0; 95% CI 1.3-3.0; p = 0.002) and cognitive impairment in processing speed (OR = 2.0; 95% CI 1.3-3.3; p = 0.004) were associated with unemployment, but not with the inability to maintain employment. **Discussion and conclusion**: In young patients after a first-ever ischemic stroke, major VCD and impaired processing speed in the subacute phase after stroke were independently associated with unemployment, but not with the inability to maintain employment.

Schellekens et al. 2025.

European Stroke Journal, vol. 10, no. 3.

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

Keywords: Cognitive impairment; neuropsychological tests; return to work; stroke in young adults.

Evidence Level: 4B

Link: https://pubmed.ncbi.nlm.nih.gov/40071576/

Presenteeism and Absenteeism

The Job Demands and Accommodation Planning Tool (JDAPT): A nine-month evaluation of use, changes in self-efficacy, presenteeism, and absenteeism in workers with chronic and episodic disabilities

Purpose: Enhancing workplace communication and support processes to enable individuals living with disabilities to sustain employment and return to work is a priority for workers, employers, and community stakeholders. The objective of this study was to evaluate a new resource that addresses support challenges, the Job Demands and Accommodation Planning Tool (JDAPT), and assess its use, relevance, and outcomes over a nine-month follow-up period. **Methods**: Workers with physical and mental health/cognitive conditions causing limitations at work were recruited using purposive sampling. Online surveys were administered at baseline (prior to using the JDAPT), and at three and nine months post-baseline. Information was collected on demographics (e.g., age, gender) and work characteristics (e.g., job sector, organization size). Outcomes included assessing JDAPT use and relevance, and changes in self-efficacy, work productivity difficulties, employment concerns, difficulties with job demands, and absenteeism. **Results**: Baseline participants were 269 workers (66% women; mean age 41 years) of whom 188 (69.9%) completed all three waves of data collection. Many workers reported using JDAPT strategies at and outside of work, and held positive perceptions of the tool's usability, relevance, and helpfulness. There were significant improvements (Time 1-2; Time 1-3) in self-efficacy, perceived work productivity, and absenteeism with moderate to large effect sizes in self-efficacy and productivity (0.46 to 0.78). Findings were consistent across gender, age, health condition, and work context variables. **Conclusions**: The JDAPT can enhance support provision and provide greater transparency and consistency to workplace disability practices, which is critical to creating more inclusive and accessible employment opportunities.

Gignac et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Accommodations; disability; disclosure; employment; evaluation; intervention; resources; support.
Evidence Level: 4B
Link: https://link.springer.com/article/10.1007/s10926-024-10231-w

Incidence rates and predictors of recurrent long-term mental sickness absence due to common mental disorders

Purpose: Several predictors have been identified for mental sickness absence, but those for recurrences are not well-understood. This study assesses recurrence rates for long-term mental sickness absence (LTMSA) within subgroups of common mental disorders (CMDs) and identifies predictors of recurrent LTMSA. **Methods**: This historical prospective cohort study used routinely collected data from 16,310 employees obtained from a nationally operating Dutch occupational health service (ArboNed). Total follow-up duration was 23,334 person-years. Overall recurrence rates were assessed using Kaplan-Meier estimators. Recurrence rates within subgroups of CMDs were calculated using person-years. Univariable and multivariable Cox proportional hazards models were used to identify predictors. **Results**: 15.6% of employees experienced a recurrent LTMSA episode within three years after fully returning to work after a previous LTMSA episode. Highest recurrence rates for LTMSA were observed after a previous LTMSA episode due to mood or anxiety disorders. Mood or anxiety disorders and shorter previous episode duration were predictors of recurrent LTMSA. No associations were found for age, gender, company size, full-time equivalent and job tenure. **Conclusion**: Employees should be monitored adequately after they fully returned to work after LTMSA. It is recommended to monitor high-risk employees (i.e. employees with mood or anxiety disorders and short LTMSA episode) more intensively, also beyond full return to work. Moreover, diagnosis of anxiety and depressive symptoms should be given a higher priority in occupational healthcare.

Mulder et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*

Keywords: Cox proportional hazards model; occupational health; prognostic factor; recurrent sickness absence; sick leave; survival analysis.
Evidence Level: 4B
Link: https://link.springer.com/article/10.1007/s10926-024-10226-7

The effects of a digital digestive care management program on employee absenteeism: A case-control study

Objective: 60 to 70 million people in the US have chronic gastrointestinal (GI) disorders. Employers bear a significant economic burden for GI conditions. The purpose of this study was to evaluate the effects of a digital digestive care program on absenteeism. **Methods**: Using propensity score matching between participants and nonparticipants, we evaluated sick days of public school system employees who were offered a digital digestive care program as part of their health benefits. **Results**: Baseline annual sick days were comparable for the 237 participants and 400 nonparticipants. Among employees aged 50 years and older, during the intervention period, participants had significantly fewer sick days than nonparticipants (1.7 days [SD, 4.2], P = 0.02), an approximate direct salary savings of $672/employee annually. **Conclusions**: Digital digestive care is promising for decreasing sick days among older workers.
Shepherd et al. 2025.
Journal of Occupational and Environmental Medicine, vol. 67, no. 9.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Digestive health; employee absenteeism; gastrointestinal disorders; productivity; telehealth.
Evidence Level: 4B
Link:
https://journals.lww.com/joem/fulltext/2025/09000/the_effects_of_a_digital_digestive_care_management.16.aspx

The impact of productivity loss from presenteeism and absenteeism on mental health in Japan

Objective: Mental health issues among employees cause significant productivity losses through presenteeism and absenteeism. This study aimed to quantify productivity losses caused by employees with mental health issues in Japan. **Methods**: Participants were recruited to match the Japanese population distribution by gender, age, and region. Mental health status and productivity loss were assessed using self-administered questionnaires. The results were extrapolated to estimate nationwide impact calculated using probabilistic sensitivity analysis. **Results**: We analyzed 27,507 individuals. Productivity loss due to mental health-related presenteeism was estimated at $46.73 billion, and absenteeism at $1.85 billion, equivalent to 1.1% of Japan's GDP and over seven times the medical costs for mental disorders. Women in their 20s reported more mental health issues than men. **Conclusions**: These results highlight the urgent need for businesses and governments to enhance workplace mental health measures.
Hara et al. 2025.
Journal of Occupational and Environmental Medicine, vol. 67, no. 9.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Japan; absenteeism; mental health issues; presenteeism; probabilistic sensitivity analysis; productivity loss.
Evidence Level: 4B
Link: https://doi.org/10.1097/JOM.0000000000003431

Mental stress due to poor organizational climate and high work commitment as predictor of 10-year registered sickness absence: A cohort study based on The Population Study of Women in Gothenburg

Objective: Early identification of persons at risk for sickness absence offers an opportunity to initiate preventive measures. The aim of this study was to examine whether perceived work-related stress, measured by The Work Stress Questionnaire (WSQ), predicted registered sickness absence up to 10 years later in a general working population of women. **Design**: A survey-linkage study based on the 2004-2005

wave of the Swedish 'Population Study of Women in Gothenburg (PSWG)' and 10-year follow-up in the official MiDAS sickness absence register. **Subjects**: A population-based cohort of women aged 38 and 50 in 2004/2005 were invited (participation rate 59%). Participants registered as employed or self-employed were included (n = 396). **Methods**: Predictors were indicators of work-related stress (WSQ). Outcomes were number of sickness absence episodes in total (examined using negative binomial regression) and sickness absence during separate time periods of follow-up (examined in logistic regression models). **Results**: High perceived stress due to poor organizational climate predicted sickness absence episodes (adjusted Incidence Risk Rate (IRRadj): 1.99 [95% CI 1.19-3.34]). The combination of stress due to both poor organizational climate and high work commitment gave an IRRadj of 2.32 [95% CI 1.26-4.26]. Examination of specific two-year time period indicated that the results were rather consistent for up to 8 years of follow-up. Additionally, low influence at work was associated sickness absence in some of the time periods examined. **Conclusion**: The findings indicate that perceived stress due to organizational factors at work, alone and in combination with the individual factor high work commitment, are long-lasting risk factors for sickness absence. Aligning with previous studies, the findings further suggest that WSQ might successfully aid identifying women with such elevated risk and adds that this is even true in a general population context. These findings merit further investigation in larger samples.
Knapstad et al. 2025.
Scandinavian Journal of Primary Health Care, vol. 43, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Sickness absence; cohort study; general population; organizational climate; psychosocial work environment; register-based data; work commitment.
Evidence Level: 4B
Link: https://pubmed.ncbi.nlm.nih.gov/39980097/

Interpersonal processes in the duration of sick leave of workers with chronic diseases: A dyadic analysis

Purpose: Although there is increasing awareness that significant others' perceptions and behavior can affect health outcomes, the role of interpersonal processes between sick-listed workers and significant others in sick leave and return to work (RTW) has hardly been studied. This study aims to examine the associations between illness perceptions, RTW expectations, and behaviors of significant others (engagement, buffering and overprotection) with sick leave duration within dyads of sick-listed workers with chronic diseases and their significant others. **Methods**: We used survey data linked with sick leave registry data of 90 dyads. Pearson correlations were used to study the interdependence within dyads. Multiple linear regression analyses were conducted to examine associations between survey data of both dyad members and sick leave duration. **Results**: We found moderate to strong correlations between workers and significant others, indicating interdependence within dyads regarding illness perceptions, RTW expectations and perceived significant other behaviors. Dyad members' illness perceptions ($R2 = .204$, $p = .001$) and RTW expectations ($R2 = .326$, $p = < .001$) were associated with sick leave duration, explaining respectively 12.3% and 24.5% of the variance. We found no associations between sick leave duration and active engagement, protective buffering and overprotection. **Conclusions**: This study indicates that negative illness perceptions and RTW expectations of both workers and their significant others are associated with a longer sick leave duration. Considering the interdependence within dyads, involving significant others when intervening on maladaptive illness perceptions and RTW expectations may be more effective than solely focusing on the worker's perceptions and expectations.
de Vries et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Chronic health conditions; dyadic processes; illness perceptions; occupational health; return to work; return to work expectations; significant others.
Evidence Level: 5B
Link: https://link.springer.com/article/10.1007/s10926-024-10233-8

Working hours

Paradox of long working hours: how income levels and satisfaction modify health outcomes

This study investigates how household income levels and satisfaction with income impact the relationship between long working hours and self-rated health (SRH) among Korean workers. We analysed data from the Korean Labour & Income Panel Study spanning 2018 to 2022, including 8,954 to 10,079 wage workers annually. Weekly working hours and SRH were the primary variables, with equivalized household income levels classified into quartiles. A generalised estimating equation was used to assess the relationship between long working hours and poor SRH, adjusted for demographic and health-related factors. Subgroup analyses were conducted based on household income level and satisfaction. Long working hours were generally associated with poor SRH (OR 1.30, 95% CI 1.10-1.54) in unadjusted model, particularly among higher-income groups (OR 1.46, 95% CI 1.05-2.01 for Q4) after adjustment for covariates. However, no significant association was found for lower-income groups. When stratified by income satisfaction, longer working hours were significantly associated with poor SRH only in income-satisfied individuals among higher-income group. The health effects of long working hours may differ according to household income levels and satisfaction. Policy interventions should consider both work hour reductions and income adequacy to improve worker health.

Min et al. 2025.
Industrial Health, vol. 63, no. 5.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Income; income satisfaction; self-rated health; working hours.
Evidence Level: 4B
Link: https://dx.doi.org/10.2486/indhealth.2024-0171

Wellness Programs

Best practice indicators in workplace mental health promotion: Development and expert validation

Most of our waking hours are spent in the workplace, where mental health significantly impacts workers' quality of life and overall well-being. Mental health can have both positive and negative consequences not only on the working population but also on organizations and society as a whole. In this context, best practices in Workplace Mental Health Promotion (WMHP) are essential for guiding initiatives aimed at fostering mental health in occupational settings. The main objective of this study was to develop and validate best-practice indicators for WMHP. For this purpose, a qualitative empirical design was employed. Drawing on a review of the WMHP literature, a list of potential indicators was generated and subsequently submitted to an expert panel for evaluation. The reliability of the expert judgments was assessed using the intraclass correlation coefficient (ICC). Content validity was evaluated through the content validity ratio (CVR) and the modified kappa statistic (K*). As a result, 27 validated, evidence-based indicators were obtained, which showed consistency with findings from previous research. These results have important theoretical and practical implications and can inform future research as well as guide practitioners and organizations in the implementation of WMHP practices.

Montes et al. 2025.
Health Promotion International, vol. 40, no. 5.
User License:
Keywords: Best practices; content validity; expert ratings; mental health promotion; workplace.
Evidence Level: 5B
Link: https://academic.oup.com/heapro/article/40/5/daaf147/8254074?login=false

Organisational Issues

Exploring the dynamics of safety culture: analyzing attitudes, practices, and perceptions among chemical laboratory employees in Sri Lanka

This study explores the safety culture among chemical laboratory workers in Sri Lanka's academic, industrial, and government sectors, examining how attitudes, practices, and perceptions influence safety practices, mitigate risks, and promote worker well-being. A cross-sectional survey of 267 laboratory workers was conducted between March 14 and July 14, 2024, using the Laboratory Safety Culture Survey. Data analysis involved t-tests, ANOVA, Tukey's post hoc tests, and chi-square tests to evaluate differences in safety culture components and participant characteristics. The findings revealed significant variations in safety attitudes and practices across the three sectors. Industrial laboratories exhibited stronger safety practices, including higher compliance with personal protective equipment (PPE) protocols, while academic and government sectors faced challenges due to limited resources and inconsistent safety practices. The study highlighted the need for sector-specific safety training, effective risk communication, and enhanced adherence to safety protocols, particularly in academic and government settings. Additionally, the importance of leadership in fostering a strong safety culture was emphasized, with active involvement from principal investigators and supervisors contributing to better safety outcomes. The results suggest that tailored interventions, adequate resource allocation, and increased leadership engagement are crucial for improving safety practices and sustaining a culture of safety across laboratories.

Wasana et al. 2025.

Industrial Health, vol. 63, no. 5.

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

Keywords: Academic sectors; chemical laboratory; government sectors; industrial sectors; safety behaviors; safety culture dynamics; sri lankan employees.

Evidence Level: 4B

Link: https://www.jstage.jst.go.jp/article/indhealth/63/5/63_2024-0187/_article

The impact of coworker guanxi on workers' safety behaviors in the construction industry: The effects of team identification, team knowledge sharing, and team safety climate

This study explores how coworker guanxi (CG) influences workers' safety behaviors (WSBs) in China's construction industry, focusing on the mediating roles of team identification (TI) and team knowledge sharing (TKS), and the moderating effect of team safety climate (TSC). Based on social exchange theory and previous literature, the research proposes a dual-mediation model to capture the complex interplay between these factors. A survey was conducted with 347 frontline construction workers across three major Chinese cities to test the hypotheses. Latent variable models revealed that CG has a significant positive impact on WSB, both directly ($\beta = 0.155$, $p < 0.001$) and indirectly through TI (indirect effect = 0.216) and TKS (indirect effect = 0.230). The results also showed that TSC moderates the relationship between CG and both TI and TKS, amplifying the positive effects on safety behaviors in construction teams. These findings offer important theoretical contributions by integrating CG into safety behavior research and extending social exchange theory in the context of Chinese construction environments. Additionally, the study provides practical insights for construction managers, suggesting that fostering strong coworker relationships and a positive safety climate can significantly improve safety behaviors, ultimately reducing workplace accidents and enhancing overall safety performance.

Wang et al. 2025.

Frontiers in Public Health, vol. 13.

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

Keywords: Construction workers; coworker guanxi; team identification; team knowledgesharing; team safety climate; workers' safety behaviors.

Evidence Level: 5B

Link: https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1659728/full

Job Design

Crafting safety in the storm: An occupational health and safety professionals' job crafting scale

Introduction: This study aims to develop and validate a job crafting scale designed specifically for occupational health and safety (OHS) professionals working in a crisis environment. Job crafting, defined as the proactive adjustment of job roles to better align with individual preferences and strengths, is recognized as a valuable strategy for enhancing job satisfaction, engagement, and performance in various occupational settings. However, existing job crafting scales primarily focus on general work contexts and cannot fully capture the unique dimensions of job crafting relevant to OHS professionals in a crisis response context. **Method**: Through a rigorous scale development process involving expert interviews, item generation, and exploratory and confirmatory factor analysis, the OHS job crafting scale (OHS-JCS) is developed and evaluated for its psychometric properties (Sample 1: N = 224 OHS professionals in Australia; Sample 2: N = 250 OHS professionals in the United Kingdom). **Results**: Initial findings indicated that the OHS-JCS demonstrates the proposed six-factor structure, high reliability (Cronbach's alpha = 87), and nomological validity. The scale appears to serve as a valuable tool for assessing job crafting behaviors among OHS professionals, facilitating research and interventions aimed at raising their engagement and effectiveness in safeguarding worker health and safety.

Berghoff et al. 2025.
Journal of Safety Research, vol. 94.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Crisis management; job crafting; occupational health and safety; proactivity; scale development.
Evidence Level: 5A
Link: https://www.sciencedirect.com/science/article/pii/S0022437525001124?via%3Dihub

Shift Work

Disrupted rhythms, disrupted microbes: A systematic review of shift work and gut microbiota alterations

Background: Shift work, especially during nighttime hours, disrupts the circadian system and is linked to higher rates of metabolic, gastrointestinal, cardiovascular, and neurocognitive disorders. Emerging evidence suggests that gut microbiota may mediate these associations. This systematic review assessed whether shift work alters gut microbiota composition and explored potential health consequences. **Methods**: A systematic search was conducted in PubMed, Scopus, and ScienceDirect from inception to March 2025. Studies reporting gut microbiota alterations in adult shift workers were included. Two reviewers independently screened articles and extracted data. Risk of bias was assessed using the NIH Quality Assessment Tool and the ROBINS-E framework. Five studies met the eligibility criteria and were included in the final synthesis. **Results**: The selected studies comprised four observational investigations with small sample sizes and one Mendelian randomization study leveraging large-scale genetic datasets. Observational studies reported reduced α-diversity and increased relative abundance of pro-inflammatory genera-including Escherichia/Shigella, Blautia, and Dialister-in night shift workers. These microbiota alterations were associated with gastrointestinal complaints and indicators of cardiometabolic dysfunction. The Mendelian randomization study provided preliminary evidence supporting a causal relationship between circadian misalignment, gut dysbiosis, and increased cardiovascular risk. **Conclusions**: Shift work is associated with significant alterations in gut microbiota composition that may contribute to adverse health outcomes. However, current evidence is limited and heterogeneous, preventing firm causal conclusions. Further high-quality longitudinal and interventional research is needed to clarify underlying mechanisms and inform preventive strategies.

Grasa-Ciria et al. 2025.
Nutrients, vol. 17, no. 7.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Chronodisruption; circadian rhythm; dysbiosis; gut microbiome; gut microbiota; intestinal microbiota; shift work.

Evidence Level: 1A
Link: https://www.mdpi.com/2072-6643/17/17/2894

Association of non-standard working time arrangements with safety incidents: A systematic review

Objective: To systematically review the evidence on the association between non-standard working time arrangements (such as night work or shift work) and the occurrence of safety incidents. **Design**: Systematic review conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and using a structured narrative approach and the Synthesis Without Meta-analysis framework to evaluate and summarise findings. **Data sources:** MEDLINE, Embase, PsycINFO, Web of Science and ProQuest Health and Safety Science Abstracts were searched through February 2024. **Eligibility criteria for selecting studies:** We included peer-reviewed English-language studies of paid workers (18-70 years) that examined the association between non-standard working time arrangements and safety incidents (accidents, near-accidents, safety incidents or injuries), excluding cross-sectional designs and studies on unpaid workers, athletes or military personnel. **Data extraction and synthesis**: Two reviewers independently extracted data and assessed risk of bias using standardised forms, extracting study characteristics (author, year, country, sector and population), working time arrangements and exposure assessment, outcomes and their assessment, and reported risk estimates. We conducted a narrative synthesis, classifying studies into three exposure contrasts (shift worker versus non-shift worker, time-of-day and shift intensity), and summarised risk estimates using forest plots without calculating pooled effects. **Results**: A total of 13 569 records were screened, and 24 studies met the inclusion criteria. The results indicated that shift workers generally had an elevated safety incident risk compared with non-shift workers (risk estimates ranged from 1.11 to 5.33). Most of the included studies found an increased risk of safety incidents during or after night shifts. Accumulated exposure to evening or night shifts increased the risk of safety incidents during the following 7 days. However, bias and heterogeneity across studies in design, populations and outcome measures resulted in an overall low to very low certainty of the evidence. **Conclusions**: Non-standard working time arrangements, including night and evening shifts, appear to increase the risk of occupational safety incidents. Despite the low certainty of evidence, the findings highlight a potential area for preventive measures in work scheduling. Future longitudinal studies using individual data on daily working hours are needed.
Moen et al. 2025.
BMJ Open, vol. 15, no. 9.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Occupational health services; review; systematic review; wounds and injuries.
Evidence Level: 1A
Link: https://bmjopen.bmj.com/content/15/9/e100931.long

Rotating shift work, with night shift work, affects cardiovascular risk factors: A 6-year follow-up study in the insulation industry

Objectives: To assess absolute levels and longitudinal changes in cardiovascular disease (CVD) risk factors over 6 years among rotating shift workers with night shift work and day workers in industry. **Methods**: We studied three groups, 32 night shift workers in Plant A with a high night load, 23 in Plant B with a low night load and 25 day workers during a 6-year follow-up (FU). We collected demographics by questionnaire, measured blood pressure, resting heart rate, carotid intima-media thickness (cIMT), carotid to femoral pulse wave velocity (cfPWV) and maximal oxygen uptake (V̇O2max). We analysed blood samples including lipids, glycosylated haemoglobin (HbA1c) and C reactive protein (CRP). Mixed models were used to assess changes and differences in changes of these outcomes between shift and day workers. **Results**: Over the 6-year FU weight, cfPWV and CRP increased among shift workers with a high night load, and cIMT increased among shift workers with a low night load and among day workers. Over the 6-year FU, a significant decrease in V̇O2max and an increase in HbA1c were found among all workers. The decrease in V̇O2max and increase in HbA1c were associated with number of years in shift work. **Conclusions**: Rotating shift work with night shift work in industry associates with weight increase, inflammation, arterial stiffness, increase in

cIMT and HbA1c but also decreased V̇O2max. Reducing the number of night shifts and including periods of restitution in the shift plan seem to mitigate some of the CVD risk factors.
Skogstad et al. 2025.
Occupational and Environmental Medicine, vol. 82, no. 7.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Epidemiology; longitudinal studies; occupational health; shift work.
Evidence Level: 4B
Link: https://oem.bmj.com/content/82/7/326.long

The effect of sleep deprivation on the vestibulo-ocular reflex and vestibular adaptation in healthcare night-shift workers

Objective: This study investigates the impact of sleep deprivation on the vestibulo-ocular reflex (VOR) in healthcare night-shift workers, focusing on basic VOR function and its adaptation during head movements with varying target distances. **Methods**: A prospective study was conducted with 14 night-shift healthcare workers, with a final analysis of 11 participants. Testing occurred under two conditions: After normal sleep and after a night shift. VOR gain was measured using the video head impulse test (vHIT) system for both active and passive head movements and for near and far targets. Participants also completed the computerized Dynamic Visual Acuity (c-DVA) test to assess gaze stability and a self-reported vigilance questionnaire. **Results**: Participants experienced significantly shorter sleep durations and reported lower vigilance levels on the post-night shift. VOR gain was notably reduced (7.5%) only during passive head movements toward a far target after a night shift. Other vestibular functions, such as distance modulation and other measurements including active head impulses, near-target tests, and c-DVA scores, showed no significant differences between normal sleep and sleep-deprived states. **Conclusion**: Sleep deprivation in healthcare night-shift workers demonstrated a complex effect on VOR, with significant impairment in only one specific condition (passive-far). Most other VOR functions, including adaptation to target distance, were maintained. This resilience may indicate an adaptive mechanism within the vestibular system under chronic sleep-deprived conditions, warranting further research into the underlying protective processes.
Livneh et al. 2025.
Laryngoscope, vol. 135, no. 9.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Healthcare workers; sleep deprivation; vestibular adaptation; vestibular distance modulation; vestibular‐ocular reflex (VOR); video head impulse test (vHIT).
Evidence Level: 5B
Link: https://onlinelibrary.wiley.com/doi/10.1002/lary.32160

Management and Leadership

Mental health stigma in the workplace and its association with possible actions of managers to prevent sickness absence of employees with mental health problems in the Swedish private sector: A video vignette study

Purpose: Mental health problems (MHPs) are subjected to workplace stigma and can deteriorate into common mental disorders (CMDs) and sickness absence (SA). Research has shown that personal stigmatizing attitudes limit managers' efforts towards employees with MHPs, but knowledge is lacking regarding stigma in social contexts (contextual stigma) and different types of possible preventive actions. This study investigates personal stigmatizing attitudes and three contextual stigma layers (employee, collegial, organizational) and different types of possible actions to prevent SA of employees with MHPs. **Method**: Survey data of 2769 Swedish managers working in the private sector were analysed. Personal stigmatizing attitudes were measured with the managerial stigma towards employee depression scale and supplemented with four additional items capturing contextual stigma. Managers watched video vignettes and assessed which preventive actions (n = 20) were possible to use in their organization. A sum score was

calculated reflecting the 'number of actions'. Principal component analysis revealed three action types: adapt tasks and setting, involve experts, and social support. A score reflecting the 'possibilities to implement actions' was calculated for each type. Multiple linear regression analyses were conducted with the four stigma layers as independent variables for each of the three action variables. **Results**: Personal stigmatizing attitudes and contextual stigma were significantly associated with both 'number of actions' and 'possibilities for implementing actions' relating to all action types. Patterns of associations with contextual stigma were significant but varied between the different action types. **Conclusion**: This study substantiated the role of personal stigmatizing attitudes and contextual stigma in relation to possible actions of managers to prevent SA of employees with MHPs. The results emphasize the role of contextual stigma. Implications for practice and research are discussed.
Schuller et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Mental health; prevention; sick leave; social stigma; workplace.
Evidence Level: 4B
Link: https://link.springer.com/article/10.1007/s10926-024-10220-z

Work Ability

Are health-related, lifestyle, work-related, and socio-demographic factors associated with work productivity among menopausal women? A systematic review

An increasing number of women of menopausal age, many of whom experience menopausal symptoms, are participating in the workforce. Understanding the factors that influence work productivity in this life stage can inform the development of targeted interventions. This systematic review explores which health-related, lifestyle, work-related, and socio-demographic factors are associated with work productivity among menopausal women. A systematic search was conducted for observational studies in PubMed, PsycINFO, and Embase up to July 2024. The risk of bias was assessed using an adapted Newcastle-Ottawa scale. The GRADE framework for prognostic research was applied to evaluate the quality of evidence. A total of 29 studies were included. Menopausal symptoms in general, as well as psychological and vasomotor symptoms, and lower sleep quality were associated with lower at-work productivity, with moderate to high quality of evidence. Additionally, there was moderate quality of evidence that better (perceived) health was associated with higher at-work productivity. Regarding absenteeism, moderate evidence was found for an association with vasomotor symptoms. Inconclusive evidence was found for socio-demographic, work-related factors and remaining health-related and lifestyle factors in relation to both at-work productivity and absenteeism. This review highlights the association of menopausal symptoms and poor sleep quality with decreased work productivity in menopausal women. The evidence for other associations was limited due to the low quality of available evidence or a lack of studies. Further research on modifiable lifestyle and work-related factors is needed to improve the work functioning of women during menopause.
Clevis et al. 2025.
Maturitas, vol. 200.
User License: Creative Commons CC-BY
Keywords: Absenteeism; lifestyle; menopause; psychosocial; work productivity.
Evidence Level: 1A
Link: https://www.maturitas.org/article/S0378-5122(25)00454-2/fulltext

Individual placement and support and participatory workplace intervention on the work participation of people with disabilities: A randomised controlled trial

Purpose: This study assessed the effectiveness of Individual Placement and Support (IPS), Participatory Workplace Intervention (PWI), and IPS + PWI on work participation and health of people with work disabilities. **Methods**: A randomised controlled 2 × 2 factorial trial with 120 clients and an 18-month follow-up was performed. Differences between IPS and no-IPS and between PWI and no-PWI were assessed using

log-rank tests and Cox proportional hazards models. **Results**: In the IPS group, restricted mean survival time (RMST) for sustainable paid employment was 352 days, compared to 394 in the no-IPS group (HR = 1.47, 95% CI = 0.81-2.63). In the PWI group the RMST was 378 days, compared to 367 in the no-PWI group (HR = 0.89, 95% CI = 0.48-1.64). For the secondary outcome 'starting any paid employment, a trial placement, or education' RMST was significantly lower for the IPS group (222 days) than for the no-IPS group (335 days; HR = 1.85, 95% CI = 1.01-3.42). Mental health was significantly lower (worse) in the PWI group (difference -4.07, 95% CI = -7.93 to -0.22) than in the no-PWI group. For all other secondary outcomes, no statistically significant differences were found. **Conclusion**: No statistically significant differences were observed in the duration until starting sustainable employment between IPS and no-IPS, and between PWI and no-PWI. The duration until starting any paid employment, a trial placement, or education was shorter in the IPS group than in the no-IPS group, but further research should explore whether this also increases sustainable employment in the longer term.
Oude Geerdink et al. 2025.
Journal of Occupational Rehabilitation, vol. 35, no. 3.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Labour market participation; occupational health; RCT; social welfare; supported employment; vocational rehabilitation.
Evidence Level: 2B
Link: https://link.springer.com/article/10.1007/s10926-024-10219-6

Mental well-being and work capacity: A cross-sectional study in a sample of the Swedish working population

Background: Mental health problems are common in the working-age population. More knowledge is needed on how to support work participation and reduce sickness absence. The objective of the study was to estimate the distribution of mental well-being and work capacity in women and men in a working population and assess the association between mental well-being and work capacity, while adjusting for sociodemographic characteristics, health status, and working positions. **Methods**: Cross-sectional data were collected through an online survey distributed to individuals who were currently working. The study population consisted of 8462 employees (58% women). The WHO-5 Mental Well-being Index (scale ranging from 0 to 100 with higher scores representing a better mental well-being) and the Capacity to Work Instrument (C2WI) (scale ranging from 14 to 56 with higher scores representing a more strained work capacity) were used. Univariable and multivariable linear regressions were used to assess the associations between self-perceived mental well-being and capacity to work, adjusting for sociodemographic characteristics, health status, and working positions. **Results**: Low self-perceived mental well-being and strained work capacity were more common among women, particularly younger aged (18-34 years). Poor health status was associated with strained work capacity in both men and women. Regression analyses showed that lower self-perceived mental well-being was significantly associated with strained work capacity. Among women, the fully adjusted model showed a regression coefficient (B) of - 0.253 (95% CI: -0.264 to - 0.242); among men, it was - 0.225 (95% CI: -0.237 to - 0.213). **Conclusions**: This study, focusing on a currently working population, identified disparities in self-perceived mental well-being and work capacity across gender and age groups. These findings underscore the importance of early workplace interventions to support mental well-being and work capacity in these sub-groups. Notably, the association between the WHO-5 and C2WI may be partly attributable to item-level overlap, as certain C2WI items may capture symptoms related to mental health. This potential overlap should be considered when interpreting the findings.
Blomberg et al. 2025.
BMC Public Health, vol. 25, no. 1.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Common mental disorders; mental health; mental well-being; work capacity; work participation; working population.
Evidence Level: 4B
Link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24015-1

Predicting return-to-manual performance in lower and higher-degree automation

Objective: To examine operator state variables (workload, fatigue, trust in automation, task engagement) that potentially predict return-to-manual (RTM) performance after automation fails to complete a task action. **Background**: Limited research has examined the extent to which within-person variability in operator states predicts RTM performance, a prerequisite to adapting work systems based on expected performance degradation/operator strain. We examine whether operator states differentially predict RTM performance as a function of degree of automation (DOA). **Method**: Participants completed a simulated air traffic control task. Conflict detection was assisted by either a higher- or lower-DOA. When automation failed to resolve a conflict, participants needed to prevent that conflict (i.e., RTM). Participants' self-reported workload, fatigue, trust in automation, and task engagement were periodically measured. **Results**: Participants using lower DOA were faster to resolve conflicts (RTM RT) missed by automation than those using higher DOA. DOA did not moderate the relationship between operator states and RTM performance. Collapsed across DOA, increased workload (relative to participants' own average) and increased fatigue (relative to sample average, or relative to own average) led to the resolution of fewer conflicts missed by automation (poorer RTM accuracy). Participants with higher trust (relative to own average) had higher RTM accuracy. **Conclusions**: Variation in operator state measures of workload, fatigue, and trust can predict RTM performance. However, given some identified inconsistency in which states are predictive across studies, further research is needed.ApplicationsAdaptive work systems could be designed to respond to vulnerable operator states to minimise RTM performance decrements.

Griffiths et al. 2025.
Human Factors: The Journal of the Human Factors and Ergonomics Society, vol. 67, no. 9.
User License: *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Air traffic control; automation; human–automation teaming; trust in automation; workload.
Evidence Level: 5B
Link: https://journals.sagepub.com/doi/full/10.1177/00187208251323101

Adapting to the Future of Work

Aging Workforce

Time until exit from paid work after ages 65-69 and ≥ 70, respectively: Importance of prior sickness absence and disability pension

Background: As populations age, more knowledge is needed on people who extend their working lives. The aim of this study was to explore if prior sickness absence (> 14 days) and/or disability pension (SADP) in mental and/or somatic diagnoses were associated with time until work exit after ages 65-69 and ≥ 70, respectively, among women and men. **Methods**: This prospective population-based cohort study included all 65-69-year-olds (cohort65, n = 201,263) and ≥ 70-year-olds (cohort70, n = 93,751) who were in paid work in Sweden in 2014. SADP was measured in 2010-2014 as yes/no and categorised by number of days. Work was defined as work income ≥ 75% of the income requirement for SA benefits. Work exits were observed between 2015 and 2018. Linked microdata were analysed using Accelerated Failure Time model to derive Time Ratios (TR) and 95% confidence intervals (95%CI), adjusting for sociodemographic factors and branch of industry, and censoring for death and emigration. **Results**: Most individuals had no prior SADP (cohort65: 66.3% women, 75.8% men; cohort70: 96.8% women, 97% men). In both cohorts and sexes, ~ 80% remained in paid work at least some time during follow-up, and ~ 41% worked throughout the follow-up. In cohort65, women with prior mental SADP (TR 0.94; 95%CI 0.93-0.96), and women (0.95; 0.94-0.96) and men (0.94; 0.93-0.95) with prior somatic SADP had marginally shorter time until work exit than individuals of the same sex without the corresponding SADP. Prior SA was generally not associated with work exit in cohort70. **Conclusions**: Neither mental nor somatic SADP was strongly associated with time until work exit.

Martikainen et al. 2025.
BMC Public Health, vol. 25, no. 1.

User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Extended working life; mental; retirement; sick leave; somatic.
Evidence Level: 4B
Link: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24425-1

Technology

Advancements in artificial intelligence and machine learning for occupational risk prevention: A Systematic review on predictive risk modeling and prevention strategies

Background: Occupational risk prevention is a critical discipline for ensuring safe working conditions and minimizing accidents and occupational diseases. With the rise of artificial intelligence (AI) and machine learning (ML), these approaches are increasingly utilized for predicting and preventing workplace hazards. This systematic review aims to identify, evaluate, and synthesize existing literature on the use of AI algorithms for detecting and predicting hazardous environments and occupational risks in the workplace, focusing on predictive modeling and prevention strategies. **Methods**: A systematic literature review was conducted following the PRISMA 2020 protocol, with minor adaptations to include conference proceedings and technical reports due to the topic's emerging and multidisciplinary nature. Searches were performed in IEEE Digital Library, PubMed, Scopus, and Web of Science, with the last search conducted on 1 August 2024. Only peer-reviewed articles published from 2019 onwards and written in English were included. Systematic literature reviews were explicitly excluded. The screening process involved duplicate removal (reducing 209 initial documents to 183 unique ones), a preliminary screening based on titles, abstracts, and keywords (further reducing to 92 articles), and a detailed full-text review. During the full-text review, study quality was assessed using six quality assessment (QA) questions, where articles receiving a total score below 4.5 or 0 in any QA question were excluded. This rigorous process resulted in the selection of 61 relevant articles for quantitative and qualitative analysis. **Results**: The analysis revealed a growing interest in the field, with a clear upward trend in publications from 2021 to 2023, and a continuation of growth into 2024. The most significant contributions originated from countries such as China, South Korea, and India. Applications primarily focused on high-risk sectors, notably construction, mining, and manufacturing. The most common approach involved the use of visual data captured by cameras, which constituted over 40% of the reviewed studies, processed using deep learning (DL) models, particularly Convolutional Neural Networks (CNNs) and You Only Look Once (YOLO). **Conclusions**: The study highlights current limitations, including an over-reliance on visual data (especially challenging in low-visibility environments) and a lack of methodological standardization for AI-based risk detection systems. Future research should emphasize the integration of multimodal data (visual, environmental, physiological) and the development of interpretable AI models (XAI) to enhance accuracy, transparency, and trust in hazard detection systems. Addressing long-term societal implications, such as privacy and potential worker displacement, necessitates transparent data policies and robust regulatory frameworks.

Armenteros-Cosme et al. 2025.
Sensors (Basel), vol. 25, no. 17.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Artificial intelligence; machine learning; occupational safety; risk prevention; systematic literature mapping.
Evidence Level: 1A
Link: https://www.mdpi.com/1424-8220/25/17/5419

Fatigue monitoring using wearables and AI: Trends, challenges, and future opportunities

Monitoring fatigue is essential for improving safety, particularly for people who work long shifts or in high-demand and high-risk environments such as transportation, construction, healthcare, and manufacturing. The development of wearable technologies, such as fitness trackers and smartwatches, has made it possible to continuously analyze physiological signals in real-time to determine a person's level of exhaustion. This has allowed for timely insights into preventing hazards associated with fatigue. This review focuses on wearable technology and artificial intelligence (AI) integration for fatigue detection, using a systematic approach guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology. Studies that used signal processing methods to extract pertinent aspects from physiological data, such as electrocardiogram (ECG), electromyogram (EMG), and electroencephalogram (EEG), among others, were analyzed as part of the systematic review process. These features were then analyzed using models, to detect patterns of fatigue and anticipate its onset. By merging data from several sources, information fusion techniques enhanced the precision and dependability of fatigue evaluation. The findings demonstrate that wearable devices can accurately identify fatigue through multi-modal signal analysis when combined with advanced ML/DL models. Information fusion techniques, which combine data from multiple sensors, significantly improved the accuracy and reliability of fatigue assessments. These developments open the door for more improvements in this field and offer valuable tools for enhancing safety and reducing fatigue-related hazards.

Kakhi et al. 2025.

Computers in Biology and Medicine, vol. 195.

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

Keywords: Artificial intelligence; deep learning; fatigue; machine learning; physiological fatigue.

Evidence Level: 1A

Link: https://linkinghub.elsevier.com/retrieve/pii/S0010-4825(25)00812-1

Anxiety or engaged? Research on the impact of technostress on employees' innovative behavior in the era of artificial intelligence

Technostress has emerged as a prevalent source of workplace stress as artificial intelligence (AI) becomes increasingly integrated into organizations. However, current literature predominantly focuses on the negative psychological impacts of technostress, highlighting the need for research into its potential benefits. To clarify the impact of technostress on employee innovative behavior, this study proposes a conceptual model grounded in transactional stress theory. Specifically, it investigates the mechanisms linking technostress to innovation behavior through the mediating roles of job anxiety and work engagement, with corporate digital responsibility (CDR) (i.e., organizational obligations in digital transformation encompassing data ethics, lawful technology use, and mitigation of digitalization's adverse effects) serving as a contextual boundary condition. Based on two-wave survey data from employees across Chinese manufacturing firms, this study conducted confirmatory factor analysis (CFA) and path regression analysis using Mplus 8.3. The results reveal that the effect of technostress on employee innovative behavior hinges on employees' appraisal of technostress. Specifically, when perceived as a hindrance, technostress triggers job anxiety, thereby inhibiting innovation behavior. When perceived as a challenge, it fosters work engagement, which enhances innovation behavior. Furthermore, CDR attenuates the positive relationship between technostress and job anxiety while amplifying its positive association with work engagement. Additionally, CDR moderates the mediating effect of job anxiety in the technostress-innovation behavior link. However, CDR does not significantly moderate the mediating role of work engagement, possibly because this mechanism is influenced by multiple contextual factors and requires further research in the future. This paper contributes to the technostress literature by clarifying how technostress affects employee innovative behavior through different mechanisms. This study holds important theoretical and practical significance for improving employees' adaptability and promoting the innovative development of enterprises amidst the technostress induced by AI.

Zhang et al. 2025.

Acta Psychologica, vol. 259.

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

Keywords: Corporate digital responsibility; employee innovative behavior; job anxiety; technostress; work engagement.

Evidence Level: 4B

Link: https://www.sciencedirect.com/science/article/pii/S0001691825007553?via%3Dihub

Machine learning and the labor market: A portrait of occupational and worker inequities in Canada

Introduction: Machine learning (ML), an artificial intelligence (AI) subfield, is increasingly used by Canadian workplaces. Concerningly, the impact of ML may be inequitable and contribute to social and health inequities in the working population. The aim of this study is to estimate the number of workers in occupations with high, medium, and low ML exposure and describe differences in exposure according to occupational and worker sociodemographic factors. **Methods**: Canadian occupations were scored according to the extent to which they were made up of job tasks that could be performed by ML. Eight years of data from Canada's Labour Force Survey were pooled and the number of Canadians in occupations with high, medium, or low exposure to ML were estimated. The relationship between hourly wages, educational attainment, and job skill, training and experience requirements, and ML exposure was examined using multinomial models that were stratified by gender. **Results**: Approximately 5.7 million Canadians are working in occupations characterized by high ML exposure. Women workers and workers with a college or bachelor's degree and in occupations with lower job skills requirements made up a greater proportion of workers in occupations with high ML exposure. Multinomial models indicated gender differences in the relationship between independent variables and ML exposure. Among men, higher educational attainment and hourly wages were associated with high occupational ML exposure. However, among women, higher educational attainment and hourly wages were associated with low occupational ML exposure. **Conclusion**: ML exposure is segmented according to occupational and worker sociodemographic characteristics and has the potential to widen inequities in the working population. ML may have a gendered effect and disproportionately impact certain groups of women when compared to men. We provide a critical evidence base to inform strategic responses that ensure inclusion in a working world where ML is commonplace.

Jetha et al. 2025.
Social Science and Medicine, vol. 381.
User License: *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) (https://creativecommons.org/licenses/by-nc-nd/4.0/)*
Keywords: Artificial intelligence; future of work; gender differences; labor market data analysis; machine learning; occupational exposure; worker inequities.
Evidence Level: 4B
Link: https://www.sciencedirect.com/science/article/pii/S0277953625006264?via%3Dihub

Innovative technologies to improve occupational safety in mining and construction industries: Part II

Innovative technologies have been supporting the improvement of comfort and safety at work in construction and mining, which are classified as high-risk sectors, for many years. A two-part study (Part I and Part II) was conducted in which the implementation of innovative technologies was analysed and evaluated (opportunities and limitations). In Part II, the technologies employed in the work environment by employees to enhance their comfort and safety at work were analysed. These technologies encompass virtual and augmented reality, innovative personal and collective protective equipment, and exoskeletons. Following a thorough analysis of the extant scientific literature from the Scopus database, it was determined that there were research gaps that required attention. In addition to the evident advantages of enhancing the safety of workers, innovative technological solutions also engender numerous economic benefits for employers, which impact sustainable development in enterprises. In order to fully exploit the potential of modern technologies, it is necessary to continue their integration and overcome implementation barriers, such as the need for changes in education and training, adequate funding, and the development of safety awareness and culture in companies.

Bęś et al. 2025.
Sensors (Basel), vol. 25, no. 18.
User License*: Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Construction; innovative technologies; mining; occupational safety.
Evidence Level: 5B
Link: https://www.mdpi.com/1424-8220/25/18/5717