



Emerging Evidence Alert September 2021

This Emerging Evidence Alert includes the latest peer-reviewed articles, reports and evidence on a range of workplace health and safety, prevention, recovery at work and return to work topics. It provides a review of recent journal articles and relevant content related to Comcare’s five research themes: Fostering Work Participation; Building Employer Capability; Adapting to the Future of Work; Guiding and Supporting Mental Health and Wellbeing; and Enabling Healthy and Safe Workplaces. Collated articles were published in August 2021 only.

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Monthly research highlight

Barrier and enablers for males accessing EAP in the workplace

Men account for approximately 76% of all deaths by suicide in Australia, most of these deaths were among those of working age. There are many initiatives within Australia that aim to improve mental health literacy and increase help-seeking behaviours in men. Despite this, there is still an underutilisation of mental health services by men. Employee Assistance Programs (EAPs) provide free and confidential mental health services to employees, however these too are underutilised by male workers.

A [qualitative study](#) was conducted with 44 male participants from both white and blue collar occupations. Participants attended focus groups and interviews to better understand why they do not seek help from their EAP service. From these, the following barriers were identified:

- No need for EAP - already accessing alternative supports
- Uncertainty of EAP services
- Scepticism and distrust of EAP - issues of trustworthiness and confidentiality
- Societal and workplace cultures - fear of stigma and career jeopardy
- Lack of knowledge about EAPs.

Key enablers that employers may consider to improve the uptake of EAPs by male workers include relatable and trustworthy messaging, encouraging proactive connections, and improved service delivery. These findings indicate that employers can focus on strategies to redefine workplace culture and stigma to increase utilisation of EAPs by male employees.

Comcare has developed evidence-based resources that support the design and evaluation of better practice EAP services that can improve organisational outcomes and workers' health and wellbeing. The resources were developed in consultation with organisations covered by the Comcare scheme. For more information, visit the [Comcare website](#).

Description of Evidence Levels Definitions Used in this Review

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

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

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

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

Fostering Work Participation

Return to Work

Rehabilitation interventions to support return to work for women with breast cancer: A systematic review and meta-analysis

Background: Research recommends the development and evaluation of interventions to support women with breast cancer in returning to, or managing, work. Despite this, there has historically been a paucity of rehabilitation interventions to support women with breast cancer to maintain or return to their work role. The aim of this systematic review was to examine key characteristics of rehabilitation interventions, and their effectiveness on work outcomes for women with breast cancer, compared to usual care. **Methods:** A systematic review was conducted of controlled studies of rehabilitation interventions with work outcomes for women with breast cancer. Six databases were systematically searched: EMBASE, Web of Science, MEDLINE (OVID), CINAHL, PsycINFO, and the Cochrane Central Register of Controlled Trials (CENTRAL). Results are presented either as pooled odds ratio (OR) or pooled effect size (hedges g) between groups, with 95% confidence intervals (CI). Narrative synthesis was conducted on intervention outcomes not suitable for meta-analysis. **Results:** Five thousand, five hundred and thirty-five studies were identified. Nine out of 28 abstracts met inclusion criteria. Heterogeneity of interventions and outcomes precluded meta-analysis for most outcomes. Of the interventions included in meta-analysis, no significant differences compared to usual care were found for sick leave (2 studies (12 months); OR 1.11 (95% CI: 0.66 to 1.87), number of sick days taken (2 studies (six months); difference in effect: - 0.08, (95% CI: - 0.48 to 0.38) or working hours (2 studies (12 months); 0.19, (95% CI: - 0.20 to 0.64). Only one study, with a multidisciplinary intervention, showed a significant difference for work outcomes when compared to usual care. Work-specific content featured in three interventions only, none of which provided conclusive evidence for improvement in work outcomes. Enhanced physical and psychological sequelae, and quality of life was observed in some studies. **Conclusion:** There remains a lack of effective and methodologically rigorous rehabilitation intervention studies for breast cancer survivors. The development and evaluation of effective rehabilitation interventions to support return to work is warranted.

Algeo et al. 2021.

BMC Cancer, vol. 21, no. 1.

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Keywords: Employment; Quality of life; Activities of daily living; Breast neoplasms; Survivorship

Evidence Level: 1A

Link: <https://bmccancer.biomedcentral.com/articles/10.1186/s12885-021-08613-x>

Insomnia is associated with the effect of inpatient multimodal occupational rehabilitation on work participation in workers with musculoskeletal or mental health disorders: Secondary analyses of a randomized clinical trial

Study objectives: Insomnia is common among people with musculoskeletal and/or mental health disorders. This study aimed to assess whether insomnia is associated with the favorable effect from inpatient multimodal occupational rehabilitation on future work participation among individuals with these conditions. **Methods:** Insomnia was measured at baseline through a randomized clinical trial that compared the effect of inpatient multimodal occupational rehabilitation with a less-comprehensive program of outpatient acceptance and commitment therapy on future work participation. The inpatient multimodal program lasted 3.5 weeks at the rehabilitation center, comprising psychoeducational sessions (including sleep education), fixed schedules, acceptance and commitment therapy, physical exercise and work-related problem-solving, whereas the outpatient program comprised mainly six weekly acceptance and commitment therapy sessions. Both programs were group-based. The study tracked cumulative sick leave during the 12 months of follow-up using national registry data. **Results:** Among the 163 adults included in this subgroup analysis, 56% (n=91) reported insomnia. Overall, we found statistical evidence of interaction between the occupational program and insomnia concerning cumulative sick leave (p=0.03). Compared with people without insomnia in the comprehensive inpatient multimodal program, people with insomnia had 12 (95% CI: -48 to 24) fewer days with sick leave if they participated in the inpatient program

and 46 (95% CI: 8 to 83) more days if they participated in the outpatient program. **Conclusion:** These findings suggest that insomnia should be addressed specifically before individuals on sick leave are considered for participation in occupational rehabilitation and that individuals with insomnia may benefit in particular from inpatient rehabilitation.

Skarpsno et al. 2021.

Nature and Science of Sleep, vol. 21.

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(<https://creativecommons.org/licenses/by-nc/3.0/>)

Keywords: Chronic pain; Mental health; Occupational therapy; Sick leave; Sleep problems; Work

Evidence Level: 2B

Link: <https://www.dovepress.com/insomnia-is-associated-with-the-effect-of-inpatient-multimodal-occupat-peer-reviewed-fulltext-article-NSS>

Breastfeeding after returning to work: A systematic review and meta-analysis

Background: The benefits of breastfeeding are widely known; however, continuation after returning to work (RTW) is not. We aimed to conduct a systematic review and meta-analysis to assess the prevalence of breastfeeding after RTW. The secondary objectives were to compare the economic statuses between continents. **Method:** PubMed, Cochrane Library, Base, and Embase were searched until 1 September 2020, and two independent reviewers selected the studies and collated the data. To be included, articles needed to describe our primary outcome, i.e., prevalence of breastfeeding after RTW. **Results:** We included 14 studies, analyzing 42,820 women. The overall prevalence of breastfeeding after RTW was 25% (95% CI, 21% to 29%), with an important heterogeneity ($I^2 = 98.6\%$)-prevalence ranging from 2% to 61%. Stratification by continents and by GDP per capita also showed huge heterogeneity. The Middle East had the weakest total prevalence with 10% (6% to 14%), and Oceania the strongest with 35% (21% to 50%). Despite the prevalence of breastfeeding in general increasing with GDP per capita (<US\$5000: 19%, US\$5000-30,000: 22%; US\$30,000 to 50,000: 25%, >US\$50,000 42%), the prevalence of non-exclusive breastfeeding follows more of a U-curve with the lowest and highest GDP per capita having the highest percentages of breastfeeding (<US\$5000: 47% and >US\$50,000: 50%, versus <28% for all other categories).

Conclusion: Breastfeeding after RTW is widely heterogeneous across the world. Despite economic status playing a role in breastfeeding after RTW, cultural aspects seem influential. The lack of data regarding breastfeeding after RTW in most countries demonstrates the strong need of data to inform effective preventive strategies.

Dutheil et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Lactation; Occupation; Pregnancy; Public health; Well-being

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/18/16/8631>

Presenteeism and Absenteeism

Workplace discrimination as risk factor for long-term sickness absence: Longitudinal analyses of onset and changes in workplace adversity

Workplace discrimination may affect the health of the exposed employees, but it is not known whether workplace discrimination is also associated with an increased risk of long-term sickness absence. The aim of this study was to examine the longitudinal associations of changes in and onset of workplace discrimination with the risk of long-term sickness absence. Data on workplace discrimination were obtained from 29,597 employees participating in survey waves 2004, 2006, 2008 and/or 2010 of the Finnish Public Sector Study. Four-year changes in long-term sickness absence (≥ 10 days of medically certified absence with a mental or non-mental diagnosis) were assessed. This covered successive study waves in analyses of onset of workplace discrimination as well as fixed effect analyses of change in workplace discrimination (concurrent i.e. during the exposure year and 1-year lagged i.e. within one year following exposure), by using each

employee as his/her own control. The risk of long-term sickness absence due to mental disorders was greater for employees with vs. without onset of workplace discrimination throughout the 4-year period, reaching a peak at the year when the onset of discrimination was reported (adjusted risk ratio 2.13; 95% confidence interval (CI) 1.80-2.52). The fixed effects analyses showed that workplace discrimination was associated with higher odds of concurrent, but not 1-year lagged, long-term sickness absence due to mental disorders (adjusted odds ratio 1.61; 95% CI 1.33-1.96 and adjusted odds ratio 1.02; 95% CI 0.83-1.25, respectively). Long-term sickness absence due to non-mental conditions was not associated with workplace discrimination. In conclusion, these findings suggest that workplace discrimination is associated with an elevated risk of long-term sickness absence due to mental disorders. Supporting an acute effect, the excess risk was confined to the year when workplace discrimination occurred.

Clark et al. 2021.

PLoS One, vol. 16, no. 8.

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Keywords: Discrimination; Sickness; Absence; Workplace Adversity; Employees

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0255697>

Effects of employee sickness presence on customer repurchase and recommendation intentions: The role of customer affective reactions

Sickness presence can have important individual and organizational consequences, such as health deterioration or productivity loss. Additional risks, such as negative customer reactions, may be particularly relevant in the service sector. Based on affective events theory and appraisal theories, we hypothesize that employee sickness presence negatively impacts customer repurchase and recommendation intentions. Furthermore, we explore potential affective mechanisms of these effects, including disease avoidance, personal anger, moral outrage, post-consumption guilt, and customer compassion for the employee. We conducted four studies, including three experimental vignette methodology studies (Ns = 227, 72, and 763) and a qualitative study (N = 54). In Study 1, employee sickness presence had negative effects on repurchase and recommendation intentions. Results of Study 2 show that customers experienced disgust, fear, anger, guilt, compassion, and indifference in response to sickness presence. In Study 3, anger explained the negative effects of employee sickness presence on repurchase and recommendation intentions, while appraisals of moral fairness were negatively related to both customer intentions. Finally, in Study 4, disgust and anger explained negative effects, while fear, guilt, and compassion explained positive effects of employee sickness presence on customer intentions. Appraisals of goal incongruence, reduced agency of the customer, and uncertainty were negatively related to customer intentions. The physical absence of the customer in the service encounter (phone call) mitigated the experience of disgust, fear, and anger, whereas it exacerbated feelings of compassion for the ill employee.

Dietz et al. 2021.

Journal of Business and Psychology, vol. 16.

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Keywords: Customer service; Presenteeism; Sickness presence

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8366743/>

Working Hours

Part-time work and health in the United States: The role of state policies

Part-time work is a common work arrangement in the United States that can be precarious, insecure, and lacking opportunities for advancement. In turn, part-time work, especially involuntary part-time work, tends to be associated with worse health outcomes. Although prior research documents heterogeneity in the health consequences of precarious work across countries, we do not know whether state-level institutional contexts shape the association between part-time work and self-rated health in the United States. Using data from the Current Population Survey (2009-2019; n = 813,077), the present study

examined whether linkages between part-time work and self-rated health are moderated by state-level social policies and contexts. At the population level, we document differences in the prevalence of fair/poor health among part-time workers across states. For instance, 21% of involuntary part-time workers reported fair/poor health in West Virginia compared to 7% of involuntary part-time workers in Massachusetts. Findings also provide evidence that voluntary ($\beta = .51$) and involuntary ($\beta = .57$) part-time work is associated with greater odds of fair/poor health among individuals. Moreover, the association between voluntary part-time work and self-rated health is weaker for individuals living in states with higher amounts for maximum unemployment insurance, higher minimum wage, and lower income inequality. State-level policies did not moderate the association between involuntary part-time work and health. The present study points to the need to mitigate the health consequences of part-time work with social policies that enhance the health of workers.

Donnelly et al. 2021.

SSM – Population Health, vol. 8, no. 15.

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Keywords: Health; Inequalities in health; Part-time work; Policy; States

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S235282732100166X?via%3Dihub>

Building Employer Capability

Job Design

Fragmentation in the future of work: A horizon scan examining the impact of the changing nature of work on workers experiencing vulnerability

Introduction: The future of work is characterized by changes that could disrupt all aspects of the nature and availability of work. Our study aims to understand how the future of work could result in conditions, which contribute to vulnerability for different groups of workers. **Methods:** A horizon scan was conducted to systematically identify and synthesize diverse sources of evidence, including academic and grey literature and resources shared over social media. Evidence was synthesized, and trend categories were developed through iterative discussions among the research team. **Results:** Nine trend categories were uncovered, which included the digital transformation of the economy, artificial intelligence (AI)/machine learning-enhanced automation, AI-enabled human resource management systems, skill requirements for the future of work; globalization 4.0, climate change and the green economy, Gen Zs and the work environment; populism and the future of work, and external shocks to accelerate the changing nature of work. The scan highlighted that some groups of workers may be more likely to experience conditions that contribute to vulnerability, including greater exposure to job displacement or wage depression. The future of work could also create opportunities for labor market engagement. **Conclusion:** The future of work represents an emerging public health concern. Exclusion from the future of work has the potential to widen existing social and health inequities. Thus, tailored supports that are resilient to changes in the nature and availability of work are required for workers facing vulnerability.

Jetha et al. 2021.

American Journal of Industrial Medicine, vol. 64, no. 8.

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Keywords: Future of work; Labor market exclusion; Social and health inequities; Social determinants of health; Vulnerable workers; Work arrangements; Work environment

Evidence Level: 6A

Link: <https://onlinelibrary.wiley.com/doi/10.1002/ajim.23262>

Working from home: Cognitive irritation as mediator of the link between perceived privacy and sleep problems

Since the COVID-19 pandemic began, many employees have been required to work full- or part-time at home. This paper investigates the impact of perceived privacy on cognitive irritation and sleep problems among employees who worked from home during the pandemic. Additionally, we analyzed the role of cognitive irritation as a mediator between privacy and sleep problems. We created a cross-sectional questionnaire, which was completed by 293 employees who performed home-based telework in German-speaking Switzerland. A mediation analysis was then conducted using a multiple regression analysis. A test of the indirect effect showed a significant mediation path from perceived privacy via cognitive irritation to sleep problems. Hence, the negative indirect effect indicates that perceived privacy is an important job resource that may prevent sleep problems. Further research is needed regarding home-based telework and recovery strategies to prevent sleep problems.

Wütschert et al. 2021.

Industrial Health, vol. 20.

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Keywords: Cognitive irritation; Perceived privacy; Sleep problems; Telework; Working from home

Evidence Level: 4B

Link: https://www.istage.jst.go.jp/article/indhealth/advpub/0/advpub_2021-0119/_article

Shift Work

Working hours – tracking the current and future trends

It is important to track the trends of future working hours, since working hours have strong associations to everyday life and work-life interaction, but also to health. In this paper we aim to track the current and future trends in working hours. We discuss the trends through the key dimensions of working hours: the length, timing, tempo and autonomy. We also consider the role of current trends of spatial changes of work. Changes in working time patterns are fostered by several driving factors: globalization and business restructuring challenging the current work organizations, new information technologies, demographic and climate change and the current and future pandemic. The past and current tremendous changes in working hours indicate that changes in working hours will continue. The contemporary trends in future working hours pose risks for personal, family and social life, material well-being and health. At its best, however, the new post-industrial working time regime may provide more autonomy and time for recovery to employees as new technologies and changes in business structures release opportunities for greater individual autonomy over how, where, and for how long paid work is performed.

Anttila et al. 2021.

Industrial Health, vol. 20

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Keywords: Autonomy; Shift work; Trends; Work intensity; Working hours; Working life; Working time.

Evidence Level: 6A

Link: https://www.istage.jst.go.jp/article/indhealth/advpub/0/advpub_2021-0086/_article

The mediating role of lifestyle in the relationship between shift work, obesity and diabetes

Purpose: Shift work has been related to obesity and diabetes, but the potential mediating role of lifestyle is yet unknown. Our aim was to investigate this mediating role of physical activity, diet, smoking, and sleep quality in the relationships between shift work, and obesity and diabetes. **Methods:** In this cross-sectional study, 3188 shift workers and 6395 non-shift workers participated between 2013 and 2018 in periodical occupational health checks. Weight and height were objectively measured to calculate obesity (BMI \geq 30 kg/m²). Diabetes status, physical activity, diet, smoking, and sleep quality were assessed using standardized questionnaires. Structural equation models adjusted for relevant confounders were used to analyze the mediating role of lifestyle in the relationships between shift work, and obesity and diabetes. **Results:** Shift

workers were more often obese (OR: 1.37, 95% CI 1.16-1.61) and reported more often to have diabetes (OR:1.35, 95% CI 1.003-1.11) than non-shift workers. Shift workers had lower physical activity levels, ate fruit and vegetables less often, smoked more often, and had poorer sleep quality ($p < 0.05$). Mediation analysis revealed that shift workers had a higher odds of obesity (OR: 1.07, 95% CI 1.01-1.15) and diabetes (OR: 1.13, 95% CI 1.02-1.27) mediated by poorer sleep quality. Lower physical activity levels (OR: 1.11, 95% CI 1.05-1.19) and lower intake of fruit and vegetables (OR: 1.04, 95% CI 1.01-1.15) were also mediators in the relationship between shift work and obesity, but not in the relationship between shift work and diabetes ($p \geq 0.05$). **Conclusion:** These results imply that interventions targeting diet, physical activity and in particular sleep problems specifically developed for shift workers could potentially reduce the adverse health effects of shift work.

Hulsegge et al. 2021.

International Archives of Occupational and Environmental Health, vol. 94, no. 6.

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Keywords: Diet; Night work; Overweight; Rotating shift system; Sleep; Type II diabetes

Evidence Level: 4A

Link: <https://link.springer.com/article/10.1007%2Fs00420-021-01662-6>

Ageing shift workers' sleep and working-hour characteristics after implementing ergonomic shift-scheduling rules

We studied whether implementing binding ergonomic shift-scheduling rules change ageing (≥ 45 years) social and healthcare employees' (mean age 52.5 years, 95% women) working-hour characteristics (e.g. weekly working hours, number and length of night shifts, and short shift intervals) and sleep. We compared an intervention group ($n = 253$) to a control group ($n = 1,234$) by survey responses (baseline 2007/2008, follow-up 2012) and objective working-hour characteristics (intervention group $n = 159$, control group $n = 379$) from 91 days preceding the surveys. Changes in working-hour characteristics were analysed with repeated measures general linear models. The fully adjusted model (sociodemographics and full-/part-time work) showed that proportion of short shift intervals (< 11 hr, $p = .033$) and weekend work ($p = .01$) decreased more in the intervention than in the control group. Changes in sleep outcomes were analysed with generalised logit model to binomial and multinomial variables. The fully adjusted model (sociodemographics, full-/part-time work, job strain, health behaviours, and perceived health) revealed higher odds in the intervention group for long sleep (≥ 9 hr; odds ratio [OR] 5.53, 95% confidence interval [CI] 2.21-13.80), and lower odds of short sleep (< 6 hr; OR 0.72, 95% CI 0.57-0.92), having at least two sleep difficulties often (OR 0.55, 95% CI 0.43-0.70), and more specifically difficulties in falling asleep (OR 0.56, 95% CI 0.41-0.77), waking up several times per night (OR 0.43, 95% CI 0.34-0.55), difficulties in staying asleep (OR 0.64, 95% CI 0.49-0.82), and non-restorative sleep (OR 0.70, 95% CI 0.54-0.90) than the control group. In conclusion, implementation of ergonomic shift-scheduling rules resulted in minor changes in ageing employees' objective working hours and a consistent buffering effect against worsening of sleep.

Karhula et al. 2021.

Journal of Sleep Research, vol. 30, no.4.

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Keywords: Intervention; Night shift work; Pay roll data; Social and healthcare; Well-being; Working time

Evidence Level: 5A

Link: <https://onlinelibrary.wiley.com/doi/10.1111/jsr.13227>

Work Ability

Effects of increased body mass index on employment status: A mendelian randomisation study

Background: The obesity epidemic may have substantial implications for the global workforce, including causal effects on employment, but clear evidence is lacking. Obesity may prevent people from being in paid work through poor health or through social discrimination. We studied genetic variants robustly associated with body mass index (BMI) to investigate its causal effects on employment. **Dataset/methods:** White UK ethnicity participants of working age (men 40-64 years, women 40-59 years), with suitable genetic data

were selected in the UK Biobank study (N = 230,791). Employment status was categorised in two ways: first, contrasting being in paid employment with any other status; and second, contrasting being in paid employment with sickness/disability, unemployment, early retirement and caring for home/family. Socioeconomic indicators also investigated were hours worked, household income, educational attainment and Townsend deprivation index (TDI). We conducted observational and two-sample Mendelian randomisation (MR) analyses to investigate the effect of increased BMI on employment-related outcomes. **Results:** Regressions showed BMI associated with all the employment-related outcomes investigated. MR analyses provided evidence for higher BMI causing increased risk of sickness/disability (OR 1.08, 95% CI 1.04, 1.11, per 1 Kg/m² BMI increase) and decreased caring for home/family (OR 0.96, 95% CI 0.93, 0.99), higher TDI (Beta 0.038, 95% CI 0.018, 0.059), and lower household income (OR 0.98, 95% CI 0.96, 0.99). In contrast, MR provided evidence for no causal effect of BMI on unemployment, early retirement, non-employment, hours worked or educational attainment. There was little evidence for causal effects differing by sex or age. Robustness tests yielded consistent results. **Discussion:** BMI appears to exert a causal effect on employment status, largely by affecting an individual's health rather than through increased unemployment arising from social discrimination. The obesity epidemic may be contributing to increased worklessness and therefore could impose a substantial societal burden.

Campbell et al. 2021.

International Journal of Obesity, vol. 45, no. 8.

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Keywords: Body mass index; Employment; Workforce; Obesity

Evidence Level: 5A

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8310793/>

Work community factors, occupational well-being and work ability in home care: A structural equation modelling

Aim: To examine how work community factors are related to occupational well-being and work ability, and how occupational well-being is related to work ability. **Design:** A cross-sectional study was conducted among home care workers in one municipality in Finland. **Methods:** A self-administered survey on work and well-being was filled out by 167 employees working two shifts in 2019. Structural equation modelling was used to analyse the association between work community factors, occupational well-being and work ability. **Results:** The only work community factor directly affecting Occupational well-being was Information and work organization; the effect of the other two factors, Social support and Influence on work shifts, was indirect. All work community factors indirectly affected Work ability. Home care should emphasize information provision and work organization with optimal time use. This requires social support, a well-functioning work atmosphere and providing employees with opportunities for influence and participation.

Vauhkonen et al. 2021.

Nursing Open, vol. 15.

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Keywords: Factors; Home care; Occupational well-being; Structural equation modelling; Work ability; Work community

Evidence Level: 4A

Link: <https://onlinelibrary.wiley.com/doi/10.1002/nop2.1032>

Online survey among maritime pilots: Job-related stress and strain and the effects on their work ability

Background: Maritime pilots often navigate ships through challenging waterways. The required 24 h standby rotation system (ROS) poses a stressful working situation. This study aims to describe the current job-related stress and strain among maritime pilots and the effects on their work ability, taking into account the different rotation systems. **Methods:** Within a cross-sectional survey, pilots of all German pilots' associations were asked to complete an online questionnaire. The 1-week ROS (port pilots) was compared with the 4-month ROS (sea and canal pilots). The pilots' subjective perception of stress and strain was assessed using an established ship-specific questionnaire. Daily sleepiness and work ability were examined respectively using the Epworth Sleepiness Scale (ESS) and the Work Ability Index (WAI).

Results: The study group consisted of 401 male German pilots with an average age of 48.5 years

(participation rate 46.9%). More than 50% of the pilots evaluated irregular working hours as the main stressor in their job. 79.8% of the pilots (especially 4-month ROS) experienced high psychological demands in their workplace. 83.3% stated having regularly neglected their private obligations due to job assignments. Pilots from the 4-month ROS experienced insufficiently predictable free time and long operation times at a stretch as stressors ($p < 0.001$ and $p = 0.037$). Elevated daily sleepiness was found in 41.9% of the pilots. The overall evaluation of the WAI questionnaire showed good to very good work ability at 77.3%. Additionally, no significant differences in the daily sleepiness or the work ability were observed between the pilots of the different two ROS. **Conclusions:** Due to their subjectively higher job-related mental demands, their disturbed work-life balance, and their long operation times at a stretch, it is likely that pilots from the 4-month ROS have significantly higher job stress compared to those in the 1-week ROS. However, this does not lead to more sleepiness or reduced work ability, which suggests that the pilots of this ROS are highly adapted to their working situation. Nevertheless, intervention measures with shortened ROS amongst sea and canal pilots' associations should be tested in respect of benefit, practicability and acceptance by the pilots.

Oldenburg et al. 2021.

Journal of Occupational Medicine and Toxicology, vol. 16, no. 1.

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Keywords: Daily sleepiness; Maritime pilot; Seafaring; Strain; Work ability; Work-related stress

Evidence Level: 4A

Link: <https://occup-med.biomedcentral.com/articles/10.1186/s12995-021-00322-2>

Work ability and psychological distress in a working population: Results from the Stockholm Public Health Cohort

Aims: Psychological distress is a global public health concern with individual and societal implications causing work-related disability and loss of productivity. It is less known how much work ability contributes to the development of psychological distress. This study aimed to assess the association between self-perceived physical and mental work ability in relation to job demands, and the incidence of psychological distress in a Swedish working population. **Methods:** Data were obtained from three subsamples of the Stockholm Public Health Cohort with baseline in 2010 and follow-up in 2014, based on a working population in Stockholm County aged 18-60 years, with no or mild psychological distress at baseline ($n=29,882$). Self-perceived physical and mental work ability in relation to job demands were assessed at baseline with a subscale from the Work Ability Index. Study participants scoring 4 or more on the General Health Questionnaire 12 at follow-up were classified as having developed psychological distress during the study period. Poisson log linear regression was used to calculate crude and adjusted rate ratios with 95% confidence intervals. **Results:** At follow-up, 2543 participants (12%) had developed psychological distress. Reporting poor physical and/or poor mental work ability in relation to job demands at baseline was associated with an almost doubled rate ratio of psychological distress at follow-up, compared to reporting good work ability (rate ratio 1.8; 95% confidence interval 1.6-2.0). **Conclusions:** Poor work ability is associated with a higher incidence of future psychological distress compared to good work ability.

Onell et al. 2021.

Scandinavian Journal of Public Health, vol. 21.

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Keywords: Epidemiology; Occupational health; Psychological distress; Work ability

Evidence Level: 4B

Link: <https://journals.sagepub.com/doi/full/10.1177/14034948211033692>

Adapting to the Future of Work

Aging Workforce

Planned retirement timing in Europe: Are Europeans adapting to the policy of extending working lives

As populations are ageing concerns regarding the sustainability of European welfare states have come to the forefront. In reaction, policy makers have implemented measurements aimed at the prolongation of working lives. This study investigates whether older workers have adapted their planned retirement age, as a result of this new policy credo. Based on data from Survey of Health, Ageing and Retirement in Europe (SHARE) the analysis shows an increase of the planned retirement age (1.36 years) across all ten European countries investigated, albeit with country-specific variations. Variations on the individual level can be detected in regard to gender, education and self-reported health status.

Hess et al. 2021.

Frontiers in Sociology, vol. 5.

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Keywords: SHARE; Pension; Population ageing; Preferred retirement age; Retirement behaviour; Retirement transition

Evidence Level: 6B

Link: <https://www.frontiersin.org/articles/10.3389/fsoc.2021.691066/full>

Menopausal symptoms and work: A narrative review of women's experiences in casual, informal, or precarious jobs

Governments, employers, and trade unions are increasingly developing "menopause at work" policies for female staff. Many of the world's most marginalised women work, however, in more informal or insecure jobs, beyond the scope of such employment protections. This narrative review focuses upon the health impact of such casual work upon menopausal women, and specifically upon the menopausal symptoms they experience. Casual work, even in less-than-ideal conditions, is not inherently detrimental to the wellbeing of menopausal women; for many, work helps manage the social and emotional challenges of the menopause transition. Whereas women in higher status work tend to regard vasomotor symptoms as their main physical symptom, women in casual work report musculoskeletal pain as more problematic. Menopausal women in casual work describe high levels of anxiety, though tend to attribute this not to their work as much as their broader life stresses of lifelong poverty and ill-health, increasing caring responsibilities, and the intersectionally gendered ageism of the social gaze. Health and wellbeing at menopause is determined less by current working conditions than by the early life experiences (adverse childhood experiences, poor educational opportunities) predisposing women to poverty and casual work in adulthood. Approaches to supporting menopausal women in casual work must therefore also address the lifelong structural and systemic inequalities such women will have faced. In the era of COVID-19, with its devastating economic, social and health effects upon women and vulnerable groups, menopausal women in casual work are likely to face increased marginalisation and stress. Further research is need.

Yoeli et al. 2021.

Maturitas, vol. 1, no. 150.

User License:

Keywords: COVID-19; Discrimination; Employment; Menopause; Poverty; Work

Evidence Level: 6B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7611109/>

Working hours

Association of weekly working hours with poor psychological well-being and moderation by employment status in Korean workers

We examined the association of weekly working hours with poor psychological well-being in Korean workers and the moderating impact of employment status. This secondary analysis examined data from the fifth Korean Working Conditions Survey (2017). There were 30,108 waged employees and 14,459 self-

employed individuals. The two groups were compared using a moderated regression model with Hayes' PROCESS macro for SPSS. The self-employed had a greater mean age than the waged employees. Higher percentages of the self-employed had short weekly working hours (<40), excessively long weekly working hours (≥60), and poor psychological well-being. After controlling for age, gender, education, monthly income, and occupational class, the interaction between weekly working hours and employment status on psychological well-being was significant ($p < 0.001$). Among the self-employed, the well-being score was lowest in the short working hour group (<40 h/week), highest in the long working hour (48-59 h/week) groups, and intermediate in the excessively long working hours (≥60 h/week) group. For waged employees, psychological well-being was the greatest in the SWH group and decreased continuously as the number of weekly working hours increased. In conclusion, employment status (employee vs. self-employed) moderated the relationship between weekly working hours and psychological well-being.

Park et al. 2021.

Industrial Health, vol. 5.

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Keywords: Employment; Moderation; Self-employed; Well-being; Working hour

Evidence Level: 5B

Link: https://www.jstage.jst.go.jp/article/indhealth/advpub/0/advpub_2021-0019/_article

Boundaryless working hours and recovery in Germany

Objective: Due to recent trends such as globalization and digitalization, more and more employees tend to have flexible working time arrangements, including boundaryless working hours. The aim of this study was to investigate the relationships of various aspects of boundaryless working hours (overtime, Sunday work, and extended work availability) with employees' state of recovery. Besides, we examined the mediating and moderating role of recovery experiences (psychological detachment, relaxation, mastery, and control) in these relationships. **Methods:** We used data from 8586 employees (48% women; average age of 48 years) who took part in the 2017 BAuA-Working Time Survey, a representative study of the German working population. Regression analyses were conducted to test main effects as well as mediation and moderation. **Results:** Overtime work, Sunday work, and extended work availability were negatively related to state of recovery. Psychological detachment mediated these relationships. Furthermore, we found that relaxation and control mediated the association between extended work availability and state of recovery. However, no relevant moderating effects were found. **Conclusions:** Altogether, our findings indicate that various aspects of boundaryless working hours pose a risk to employees' state of recovery and that especially psychological detachment is a potential mechanism in these relationships. In addition, the results suggest that a high level of recovery experiences cannot attenuate these negative relationships in leisure time. Therefore, employers and employees alike should try to avoid or minimize boundaryless working hours.

Vieten et al. 2021.

International Archives of Occupational and Environmental Medicine, vol. 24.

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Keywords: Flexible working hours; Overtime; Recovery experiences; Weekend work; Work availability

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007%2Fs00420-021-01748-1>

Technology

How are techno-stressors associated with mental health and work outcomes? A systematic review of occupational exposure to information and communication technologies within the technostress model

The technostress model has introduced different factors to consider when assessing how information and communication technologies impact individuals in different work settings. This systematic review gathers evidence regarding associations between occupational exposure to technostress and health or work outcomes. In addition, we highlight typical methodological constraints of the technostress model. We

conducted electronic literature searches in June 2020 (PubMed, PubMed Central, Web of Science, Scopus, PsycInfo, PsycArticles) and independently screened 321 articles. We report on 21 articles meeting eligibility criteria (working population, technostress exposure, health or work outcome, quantitative design). The most frequently examined techno-stressors, i.e., factors of technostress, were techno-overload and techno-invasion. Techno-stressors were consistently associated with adverse health and work outcomes, apart from a positive impact on work engagement. However, studies may be subject to considerable conceptual overlap between exposure and outcome measures. Future technostress research would benefit from reducing heterogeneity in technostress measures, assessing their external validity and focussing on specific techno-stressors.

Borle et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: ICT demands; Digitalisation; Knowledge workers; Methodology; Platform work; Sociotechnical systems; Workplace well-being

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/18/16/8673>

Guiding and Supporting Mental Health and Wellbeing

Mental Health

Association between exercise variations and depressive symptoms among precarious employees in South Korea

Research regarding the association between depression and exercise has been limited regarding precariously employed individuals. The current study investigated the association between exercise variations and depressive symptoms among precarious employees in South Korea. Data from the 2014, 2016, and 2018 Korea National Health and Nutrition Examination Survey (KNHANES) were analyzed. In total, 13,080 participants aged ≥ 19 years responded to the survey. The Korean version of the PHQ-9 was utilized in addition to questions assessing regular exercise. Precariously employed men engaging in two or more variations of exercise each week were significantly less likely to report depressive symptoms (adjusted (OR): 0.78; 95% CI 0.62-0.97; $p = 0.025$), and the likelihood of depression was also lower for women who engaged in one or more forms of exercise (adjusted OR: 0.82; 95% CI 0.71-0.94; $p = 0.006$). These findings support the association between depression and exercise and suggest that greater variations in regular exercise are associated with a reduction in depression for men whereas any form of exercise reduces the risk of depression in women.

Oh et al. 2021.

Scientific Reports, vol. 11, no. 1.

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Keywords: Depression; Exercise; Employees

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-021-95383-y>

Occurrence of mental illness and mental health risks among the self-employed: A Systematic review

We aimed to systematically identify and evaluate all studies of good quality that compared the occurrence of mental disorders in the self-employed versus employees. Adhering to the Cochrane guidelines, we conducted a systematic review and searched three major medical databases (MEDLINE, Web of Science, Embase), complemented by hand search. We included 26 (three longitudinal and 23 cross-sectional) population-based studies of good quality (using a validated quality assessment tool), with data from 3,128,877 participants in total. The longest of these studies, a Swedish national register evaluation with 25 years follow-up, showed a higher incidence of mental illness among the self-employed compared to white-collar workers, but a lower incidence compared to blue-collar workers. In the second longitudinal study from Sweden the self-employed had a lower incidence of mental illness compared to both blue- and white-

collar workers over 15 years, whereas the third longitudinal study (South Korea) did not find a difference regarding the incidence of depressive symptoms over 6 years. Results from the cross-sectional studies showed associations between self-employment and poor general mental health and stress, but were inconsistent regarding other mental outcomes. Most studies from South Korea found a higher prevalence of mental disorders among the self-employed compared to employees, whereas the results of cross-sectional studies from outside Asia were less consistent. In conclusion, we found evidence from population-based studies for a link between self-employment and increased risk of mental illness. Further longitudinal studies are needed examining the potential risk for the development of mental disorders in specific subtypes of the self-employed.

Willeke et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Incidence; Mental disorders; Mental health; Mental illness; Prevalence; Self-employed; Small business; Systematic review

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/18/16/8617>

What work-related exposures are associated with post-traumatic stress disorder? A systematic review with meta-analysis

Objectives: Although there is evidence that work-related exposures cause post-traumatic stress disorder (PTSD), there are few quantitative studies assessing the degree to which these factors contribute to PTSD. This systematic review with meta-analysis identified work-related exposures associated with PTSD, and quantified their contribution to this disorder. **Methods:** We searched Medline, PsycINFO, Embase, PILOTS and Web of Science (2005-10 September 2019) for longitudinal studies on work-related exposures and PTSD. We described included articles, and conducted meta-analyses for exposures with sufficient homogeneous information. We performed subgroup analyses for risk of bias, study design and PTSD ascertainment. We assessed evidence quality using Grades of Recommendations, Assessment, Development and Evaluation, and estimated population attributable fractions. **Results:** After screening 8590 records, we selected 33 studies (n=5 719 236). From what was moderate quality evidence at best, we identified various work-related exposures that were associated with PTSD, mainly involving individuals in the military and first responder (eg, police or fire brigade) occupations. These exposures included the number of army deployments (OR: 1.15 (95% CI 1.14 to 1.16)), combat exposure (OR 1.89 (95% CI 1.46 to 2.45)), army deployment (OR 1.79 (95% CI 1.45 to 2.21)) and confrontation with death (OR 1.63 (95% CI 1.41 to 1.90)). Effects were robust across subgroups and exposures attributed modestly (7%-34%) to PTSD. We identified additional exposures in other occupations, including life threats, being present during an attack, and hearing about a colleague's trauma. **Conclusions:** We identified various work-related exposures associated with PTSD and quantified their contribution. While exposure assessment, PTSD ascertainment and inconsistency may have biased our findings, our data are of importance for development of preventive interventions and occupational health guidelines.

Coenen et al. 2021.

BMJ Open, vol. 11, no. 8.

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Keywords: Epidemiology; Mental health; Occupational & industrial medicine

Evidence Level: 1A

Link: <https://bmjopen.bmj.com/content/11/8/e049651.long>

Low-quality employment trajectories and risk of common mental disorders, substance use disorders and suicide attempt: A longitudinal study of the Swedish workforce

Objective: High-quality longitudinal evidence exploring the mental health risk associated with low-quality employment trajectories is scarce. We therefore aimed to investigate the risk of being diagnosed with common mental disorders, substance use disorders, or suicide attempt according to low-quality employment trajectories. **Methods:** A longitudinal register-study based on the working population of Sweden (N=2 743 764). Employment trajectories (2005-2009) characterized by employment quality and

pattern (constancy, fluctuation, mobility) were created. Hazard ratios (HR) were estimated using Cox proportional hazards regression models for first incidence (2010-2017) diagnosis of common mental disorders, substance use disorders and suicide attempt as dependent on employment trajectories. **Results:** We identified 21 employment trajectories, 10 of which were low quality (21%). With the exception of constant solo self-employment, there was an increased risk of common mental disorders (HR 1.07-1.62) and substance use disorders (HR 1.05-2.19) for all low-quality trajectories. Constant solo self-employment increased the risk for substance use disorders among women, while it reduced the risk of both disorders for men. Half of the low-quality trajectories were associated with a risk increase of suicide attempt (HR 1.08-1.76). **Conclusions:** Low-quality employment trajectories represent risk factors for mental disorders and suicide attempt in Sweden, and there might be differential effects according to sex - especially in terms of self-employment. Policies ensuring and maintaining high-quality employment characteristics over time are imperative. Similar prospective studies are needed, also in other contexts, which cover the effects of the Covid-19 pandemic as well as the mechanisms linking employment trajectories with mental health.

Jonsson et al. 2021.

Scandinavian Journal of Work, Environment and Health, vol. 16.

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Keywords: Mental disorders; Substance use; Employment trajectories; Suicide

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/3978>

Seeing an occupational health psychologist reduces sickness absence due to mental disorders: A quasi-experimental study

Mental health problems are a major public health and work-life issue. We examined in a quasi-experimental design whether occupational health psychologist (OHP) appointment reduces subsequent sickness absence (SA) due to mental disorders among younger Finnish employees. The present study was conducted among 18-39-year-old employees of the City of Helsinki using register data from the City of Helsinki and the Social Insurance Institution of Finland. We examined differences in SA days due to mental disorders (ICD-10, F-diagnosed sickness allowances) between those treated (at least one OHP appointment for work ability support) and the comparison group (no OHP appointment) during a one-year follow-up. The full sample (n = 2286, 84% women) consisted of employees with SA due to a diagnosed mental disorder during 2008-2017. To account for the systematic differences between the treatment and comparison groups, the included participants were matched according to age, sex, occupational class, education, previous SA, occupational health primary care visits and psychotropic medication. The weighted matched sample included 1351 participants. In the weighted matched sample, the mean of SA days due to mental disorders was 11.4 (95% CI, 6.4-16.5) for those treated (n = 238) and 20.2 (95% CI, 17.0-23.4) for the comparison group (p < 0.01) during the follow-up year. The corresponding figures in the full sample were (11.1, 6.7-15.4) days for those treated (n = 288) and (18.9, 16.7-21.1) days for the comparison group (p < 0.01). This quasi-experimental study suggests that seeing an OHP to support work ability reduces SA due to mental disorders.

Lahti et al. 2021.

Preventative Medicine, vol. 149.

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Keywords: Employee; Mental disorders; Mental health; Psychologists; Young adult

Evidence Level: 3B

Link: <https://www.sciencedirect.com/science/article/pii/S009174352100195X?via%3Dihub>

Exploring men's use of mental health support offered by an Australian Employee Assistance Program (EAP): Perspectives from a focus-group study with males working in blue- and white-collar industries

Background: Men continue to be overrepresented in the Australian suicide statistics despite wide scale public health initiatives to improve men's mental health literacy and to increase their help-seeking behaviour. Employee Assistance Programs (EAP) deliver free and confidential mental health support; however, their services are underutilised by men. In the absence of contemporary literature that explores

end-user experiences of EAPs, we asked men from blue- and white-collar employment settings about the barriers and enablers to using EAP services and explored differences between employment settings.

Methods: Forty-four men participated in this qualitative study: 32 from one white-collar employer and 12 from one blue-collar employer. Two qualified mental health professionals facilitated five first-round and three second-round focus groups and one interview with white-collar workers, and two focus groups and three interviews with blue-collar workers. Data were thematically analysed using a framework approach.

Results: Four of the six main themes were barriers: no need for EAP-alternative supports; uncertainty of EAP services; scepticism and distrust of EAP; and societal and workplace cultures. Elements of enduring barriers to EAP use were contained within sub-themes. These included lack of knowledge about EAPs, issues of trustworthiness and confidentiality, and fear of stigma and career jeopardy. Enablers comprised the need for attractive, reliable messaging and proactive connections and service delivery. Differences within sub-themes for white-collar and blue-collar groups reflected the corporate nature of work and workplace culture for white-collar participants, and workers' communication and practical problem resolution preferences for blue-collar workers. **Conclusion:** Some elements identified in the barriers to EAP use are more entrenched than were previously estimated and these need to be a priority for action to increase confidence in EAP services by end-users. EAPs that have a visible and proactive presence in the workplace, that tailor their marketing and service delivery to different workgroups, that provide a competitive advantage to its service users, and more confidently conveys independence from its client organisations may help to increase men's interest in accessing EAP support services. Further initiatives that reduce the stigma surrounding mental health and help-seeking both in society and the workplace are needed.

Matthews et al. 2021.

International Journal of Mental Health Systems, vol. 15, no. 1.

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Keywords: Employee Assistance Programs; Gender; Human Resource Management; Masculinity; Men; Mental health; Mental illness; Men's health; Workplace services

Evidence Level: 5A

Link: <https://ijmhs.biomedcentral.com/articles/10.1186/s13033-021-00489-5>

Acceptability of a digital return-to-work intervention for common mental disorders: A qualitative study on service user perspectives

Background: There is an evident discrepancy between need and provision of evidence-based return-to-work (RTW) interventions in existing mental health services. Online dissemination of evidence-based interventions is presumed to reduce this gap. However, there is almost no knowledge available on perceived acceptability of digital RTW interventions among service users, which are factors that might influence the development and implementation of future interventions. The aim of this study was to develop knowledge of service user acceptability of mWorks, a proposed digital RTW solution.

Methods: Participants (n = 18) with experience of common mental disorder and sick leave were recruited with a purposive snowball sampling method. Semi-structured interviews (n = 12) and one focus group interview (n = 6) were conducted. A deductive thematic analysis was performed according to the Theoretical Framework of Acceptability. **Results:** Digital RTW interventions were perceived as acceptable and aligned with participant value. Participants expressed positive attitudes toward having access to support, regardless of time and place. A certain ambiguity between a decline in social interactions and opportunities to RTW in a safe space was reported. Participants were confident in their ability to use digital RTW solutions, but reported the need to reduce stressful elements of using smartphones. Overly demanding digital solutions, i.e. ones requiring high cognitive effort, were described as burdensome.

Conclusions: For digital RTW solutions to be acceptable, they need to complement traditional services by providing accessible and person-centred support throughout the RTW process. They should be designed to reduce the need for cognitive effort. Future research should explore how to balance user autonomy with other support components in digital interventions.

Engdahl et al. 2021.

BMC Psychiatry, vol. 21, no. 1.

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Keywords: Anxiety; Depression; Digital solution; Mental health; Return to work; Vocational rehabilitation

Evidence Level: 5A

Link: <https://bmcp psychiatry.biomedcentral.com/articles/10.1186/s12888-021-03386-w>

Bullying and Harassment

Exposure to bullying behaviours, resilience, and return to work self-efficacy in patients on or at risk of sick leave

The study investigated relationships between exposure to bullying behaviours, return to work self-efficacy (RTW-SE) and resilience, and if resilience moderates the bullying-RTW-SE relationship among patients on sick leave or at risk of sick leave due to common mental disorders (CMD). A sample of 675 patients treated in an outpatient clinic was analysed using regressions and moderation analyses by employing SPSS and the Process macro SPSS supplement. The results showed a negative relationship between exposure to bullying behaviours and RTW-SE. There was also a positive main effect for resilience, as patients with high resilience score significantly higher on RTW-SE than patients with low resilience irrespective of levels of bullying. Further, the resilience sub-dimension personal resilience moderated the bullying-RTW-SE relationship, while the sub-dimension interpersonal resilience did not. Patients high on personal resilience showed relatively lower RTW-SE scores when exposed to bullying behaviours, compared to those that were not bullied with high personal resilience levels. Hence, one should take note of the fact that even if resilience may strengthen RTW-SE, bullying is an adverse event which particularly affects individuals who present with relatively high levels of resilience resources, at least when it comes to RTW-SE.

Aarestad et al. 2021.

Industrial Health, vol. 59, no. 3.

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Keywords: Common mental disorders; Resilience; Return to work self-efficacy; Sick leave; Workplace bullying

Evidence Level: 5A

Link: https://www.istage.jst.go.jp/article/indhealth/59/3/59_2020-0064/_article

Why victimized employees become less engaged at work: An integrated model for testing the mediating role of sleep quality

Recent studies have shown that workplace victimization is negatively related to work engagement. The explanations for the underlying mechanisms, however, are still in a nascent stage. Drawing on the limited resource theory of self-regulation and research on workplace aggression and sleep, we develop and test an integrated model, which explains that victimized employees may have impaired sleep quality and thus have less energy and be less likely to be engaged in their work. The results of logistic regression and structural equation modeling analyses of large-scale survey data collected from 90,272 employees across the years 2010, 2011, 2014, and 2017, indicate that workplace victimization is negatively related to sleep quality and subsequent workplace engagement, even controlling for alternative explanations-job insecurity and basic psychological needs for competence, autonomy, and relatedness. Our findings advance our knowledge on the detrimental consequences of workplace victimization and suggest that, while unmet basic psychological needs matter, impaired sleep quality is one reason why victimized employees find it difficult to engage at work.

Chu et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Employee health; Sleep; Work engagement; Workplace aggression

Evidence Level: 5A

Link: <https://www.mdpi.com/1660-4601/18/16/8468>

Burnout

Burnout and posttraumatic stress symptoms in police officers exposed to traumatic events: The mediating role of ruminations

Purpose: Police work carries the risk of burnout in the form of exhaustion and disengagement from work. Police officers are also exposed to traumatic events and the development of PTSD. The main aim of the cross-sectional study was to determine the mediating role played by rumination in the relationship between burnout and PTSD among police officers. It also examines whether burnout is a significant prognostic factor for PTSD symptoms. **Methods:** Data were obtained from a sample of 120 police officers. Of these one hundred, mostly men (83%), aged 23-47 years (M = 33.06, SD = 5.61), confirmed the experience of traumatic events in connection with their professional work. Three standard measuring tools were used: The Posttraumatic Checklist for DSM-5, The Oldenburg Burnout Inventory OBI, and The Event-Related Rumination Inventory. **Results:** The introduction of intrusive ruminating as an intermediary variable made the relationship between job burnout and PTSD non-significant, which indicates full mediation. The introduction of deliberate rumination as a mediator weakens the relationship between burnout and PTSD, which indicates partial mediation. It indicates that police officers who are burnout and who additionally tend to ruminate about experienced traumatic events are more likely to PTSD than police officers who are only burned out. **Conclusion:** Intervention programs for police officers should focus on strengthening stress management resources in the form of developing deliberate ruminations, thus allowing the experienced situations to be given a new meaning and to allow better coping.

Ogińska-Bulik et al. 2021.

International Archives of Occupational and Environmental Health, vol. 94, no. 6.

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Keywords: Burnout; Police officers; Post-traumatic stress disorder; Ruminations; Traumatic events

Evidence Level: 5A

Link: <https://link.springer.com/article/10.1007%2Fs00420-021-01689-9>

Job burnout among safety professionals: A Chinese survey

As safety has been attracting the attention of all countries worldwide, the importance of safety professionals in safety management systems has been emphasized, which has consistently increased their workload. However, with the increase in work pressure, the income, social status, and social identity of safety professionals has not considerably improved, because of which the work motivation of safety professionals has reduced. Therefore, we aimed to identify the job burnout level (JBL) and its potential influencing factors among safety professionals in China. A total of 526 safety professionals from various industries participated. A univariate analysis of variance, independent sample t-test, bivariate correlation analysis, and multiple regression analysis were employed to analyze the situation of job burnout. An overwhelming majority of the safety professionals (98.3%) who participated in the questionnaire exhibited varying degrees of job burnout. The numbers of respondents with higher than normal emotional exhaustion (EE), lack of personal accomplishment (LPA), and depersonalization (DP) levels were 68, 474, and 381, respectively, accounting for 12.9%, 90.1%, and 72.4% of the total respondents, respectively. When different demographic characteristics were reviewed, the job burnout levels considerably varied. For example, male safety professionals (n = 434) exhibited higher levels of EE than female safety professionals (n = 92) (p = 0.025) because female safety professionals could release the dissatisfaction or stress they had encountered at work easily, but male safety professionals could not. Educational background had little effect on LPA (p > 0.05) and EE (p > 0.05), which indicated that job burnout was a general problem at all educational levels. The higher the age of respondents, the higher the level of LPA (p < 0.001). In addition to individual factors, work-related factors also had an impact on job burnout. For instance, monthly income had an impact on EE (p = 0.023) but had little impact on DP (p > 0.05). Furthermore, social, organizational, professional, and personal factors also had an impact on job burnout among safety professionals. Hence, to begin with, these aspects could be considered to alleviate the work pressure of safety professionals and reduce their job burnout levels.

Wang et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Chinese survey; Influencing factors; Job burnout; Safety professionals

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/18/16/8343>

Psychosocial Issues

Work-family guilt in Spanish parents: Analysis of the measurement, antecedents and outcomes from a gender perspective

This research work had three objectives: (1) to analyze the psychometric properties of the Spanish version of the Work-Family Guilt Scale, (2) to examine its invariance according to gender, and (3) to study the relationship between work-family guilt (WFG) and the different proposed antecedent (e.g., hours spent working, social support, rumination, and personality) or consequential factors (e.g., life satisfaction), noting any gender differences. The incidental sample comprised 225 parents who were in paid work and had at least one child attending nursery school (49.1% women; age of total sample = 36.88 on average). Multiple-group and confirmatory factor analyses, correlations, multiple regression, and moderation analyses were carried out. The WFGS reflected the same factorial structure in men and women, with two main factors: work interfering with family guilt (WIFG) and family interfering with work guilt (FIWG). No gender differences were found. The discrepancy associated with perfectionism was the only variable that was found to be a predictor of FIWG. The major predictors of WIFG were brooding from rumination and the number of hours spent working. WIFG was also associated with lower life satisfaction in women. The implications of these results are discussed, stressing the need to promote work-family reconciliation policies.

Gómez-Ortiz et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 15.

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Keywords: Work–Family Guilt Scale; Emotion; Guilt; Parenthood; Personality; Wellbeing; Work–family conflict

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/18/15/8229>

Smashing, shaming, or polite fun and joy? How workplace humor influences positive well-being in South Korean workplaces

Humor is contextual, ambiguous, and varies within cultures but is widely associated with positive outcomes such as well-being and happiness. While humor is universal and enhances interpersonal relationships which can benefit psychological well-being, we argue that humor can also be diminish psychological well-being in Confucian-based, South Korean workplaces. Our research questions asks: how do hierarchical workplace relationships influence shared humor and positive well-being in Korean workplace contexts? Our contextual, ethnographic research includes in-depth field observations and semi structured interviews in three Korean organizations. Traditional Confucian-based cultures value face-saving, trust, and harmony while emphasizing formality and hierarchy. Korean honorifics maintain harmony, hierarchy, and politeness which creates benefits for group processes and influences the sharing of humor. Humor is enacted in accordance with workers' hierarchical status which has a significant impact upon the types of humor shared and the responses available to subordinate employees. Investigating these dimensions in Korean workplaces we argue that honorifics and hierarchy influence humor interactions in complex ways that have implications for psychological well-being.

Kim et al. 2021.

Frontiers in Psychology, vol. 4.

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Keywords: Korea; Hierarchy; Honorifics; Humor; Psychological well-being

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8371255/>

Impact of work value perception on workers' physical and mental health: Evidence from China

Research on the effect of work value perception on workers' health, especially in emerging economies, is scarce. This study, therefore, explored how work value perception affects the physical and mental health of workers in China. We also examined the mediating role of life satisfaction in the relationship between work value perception and health. Taking a random sample of 16,890 individuals in China, we used ordered probit regression and instrumental variable ordered probit regression to test the links between work value perception and workers' health based on existence, relatedness, and growth (ERG) theory. The results showed that work value perception significantly affected both the physical and mental health of workers; the results remained robust after solving the endogeneity problem. The subsample regression results showed that work value perception significantly affected the physical and mental health of female, male, married, unmarried, religious, and nonreligious workers. Furthermore, life satisfaction mediated the effect of work value perception on workers' health. These results shed light on the relationship between work value perception and health and thus have implications for improving workers' physical and mental health. This study can provide a reference for both governmental and corporate policymakers in emerging economies.

Yang et al. 2021.

Healthcare, vol. 9, no. 8.

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Keywords: ERG theory; Health policy; Labor economics; Labor welfare; Life satisfaction

Evidence Level: 5B

Link: <https://www.mdpi.com/2227-9032/9/8/1059>

Consequences of workplace ostracism: A meta-analytic review

Workplace ostracism, which is regarded as "social death," is rampant in organizations and has attracted significant research attention. We extend the understanding of workplace ostracism by conducting a meta-analysis of studies of the relationships between workplace ostracism and its consequences. We also explore the moderating effects of national culture (i.e., collectivism vs. individualism) and the mediating effects of organization-based self-esteem (OBSE). The results of a meta-analysis of 95 independent samples (N = 26,767) reveal that exposure to workplace ostracism is significantly related to individuals' attitudes, well-beings, and behaviors. Moreover, the effects of workplace ostracism on belongingness, job satisfaction, emotional exhaustion, organizational citizenship behavior (OCB) toward individuals (OCBI), organizational deviance, and interpersonal deviance are stronger in individualist contexts than in collectivist contexts. However, the relationships between workplace ostracism and organizational identification and OCB are stronger in collectivist contexts than in individualist contexts. Our meta-analytical structural equation modeling also provides evidence of the mediating effects of OBSE on the relationships between workplace ostracism and organizational commitment, job satisfaction, and job performance. The implications and limitations of our study and future research directions are also discussed.

Li et al. 2021.

Frontiers in Psychology, vol. 2.

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Keywords: Consequences; Individualism-collectivism; Meta-analysis; Organization-based self-esteem; Workplace ostracism

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8365139/>

Enabling Healthy and Safe Workplaces

Health and Wellbeing

Eye health, COVID-19, and the occupational health professional: Round table

Background: Eye health has garnered increased attention since the COVID-19 pandemic. This Round Table explored the impact mask wearing, delays in eye examinations, and increased screen time have on vision and ultimately the worker. **Methods:** Leading experts in the areas of occupational health, risk management, eye health, and communication were identified and invited to participate in a Round Table discussion. Questions posed to experts were based on literature that addressed eye health, such as mask wearing, communication and managing expectations when accessing professional eye health appointments, and increased screen time. **Findings:** Experts agreed that eye health considerations must be in place. These considerations should address not only clinical care of the patient but ways to protect workers from occupational injury associated with the eye. **Conclusion/application to practice:** The occupational health professional is a key resource for assessment and training that pertains to eye health.

Gallagher et al. 2021.

Workplace Health and Safety, vol. 69, no. 8.

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

Keywords: COVID-19; Computer Vision Syndrome; Eye health; Mask wearing

Evidence Level: 6A

Link: <https://journals.sagepub.com/doi/pdf/10.1177/21650799211022990>

Exploring well-being at work - An interview study on how IT professionals perceive their workplace

The workplace is particularly important for promoting well-being at work and general life satisfaction, as performing a professional activity can be perceived as satisfying and motivating. In addition, employment opens up opportunities for individual development that employees may be perceived as fulfilling. By conducting an interview study with IT professionals of a German medium-sized company, we investigate which factors of the individual work environment are perceived as conducive to the performance of everyday job duties and thus increase well-being at work. Furthermore, we analyze the extent to which participants are satisfied with the implementation of the factors that are important to them, whether socio-demographic differences are relevant, and whether the perception of the work environment has an effect on employees' commitment. Results show that interpersonal factors in particular are considered to be important in everyday working life. About individual factors, a mixed picture emerged, whereby sociodemographic differences play only a minor role. Furthermore, there are indications of a positive relationship between the perception of the work environment and the IT professionals' commitment. In-depth analysis of the employee statements helps to determine which aspects of the work environment should be implemented, developed, or promoted. In the long term, this can support individual learning and development paths and generates a work environment that sustainably promotes employees' well-being at work and fosters long-term employment relationships.

Zutavern et al. 2021.

Frontiers in Psychology, vol. 2, no. 12.

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Keywords: IT professionals; Commitment; Interview study; Perception; Well-being at work; Work environment

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8366063/>

Double-edged sword effect of high-performance work system on employee well-being-moderating effect of union practice

Improving the well-being of the employees is the inevitable choice to improve corporate performance and competitive advantage and the social responsibility that enterprises must undertake. Based on the job demands-resources model, this study introduces perceived organizational support and work stress as the mediator and trade union practice as the moderator to explore the double-edged sword effect of a high-performance work system (HPWS) on the well-being of the employee. Taking 243 employees from Jiangsu, Zhejiang, and Anhui as samples, we found that HPWS positively affects the well-being of the employee through perceived organizational support and negatively affects the well-being of the employee through work stress. Union practices can significantly reduce the positive effect of HPWS on work stress and further

weaken the negative effect of HPWS on the well-being of the employee through work stress. The results of this study provide a new way to explain the impact of the HPWS on the well-being of the employees and find that union practice can weaken the negative effects of HPWS. This study provides a new thinking direction for improving the well-being of employees in enterprises.

Qi et al. 2021.

Frontiers in Psychology, vol. 5.

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Keywords: Employee well-being; High-performance work system; Perceived organizational support; Union Practice; Work stress

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8374043/>

The role of alcohol use and cigarette smoking in sickness absence: Are there social inequalities?

Background: While studies have found a social gradient in negative consequences of drinking and smoking, evidence is less clear for a gradient also in alcohol use and smoking's association with sickness absence. We investigate the association between alcohol use and cigarette smoking and general sickness absence, and examine the moderating role of socio-economic status for these associations when controlling for general health status. **Method:** Questions on alcohol use, measured by the Alcohol Use Disorders Identification Test (AUDIT-C), smoking, general health and sickness absence were included in annual national cross-sectional telephone surveys on alcohol, tobacco and drug use (2015-18) amongst Norwegian adults aged 16-79-years (average response rate=59%). The analytic sample comprised 4719 full- and part-time employees aged 25-79 years (46.7% were female, mean age=44.3 years). Individual-level data on education were obtained from national registries. **Results:** In adjusted negative binomial regression analyses, current and former daily smoking were associated with a higher occurrence of sickness absence in groups with low educational attainment, but not in groups with high educational attainment. Alcohol use was negatively associated with sickness absence. While a significantly higher number of sickness days was reported by smokers in the low compared with the high education group, educational attainment did not moderate the alcohol use - sickness absence association. **Conclusion:** Daily smoking is associated with sickness absence. A negative social gradient was found in the smoking - absence association. Reduced daily smoking might give a reduction in sickness absence.

Lund et al. 2021.

The International Journal on Drug Policy, vol. 94.

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Keywords: Alcohol use; Educational groups; Sickness absence; Smoking; Social inequality

Evidence Level: 4A

Link: <https://www.sciencedirect.com/science/article/pii/S0955395921000888?via%3Dihub>

Work Health and Safety

Engaging occupational safety and health professionals in bridging research and practice: Evaluation of a participatory workshop program in the Danish construction industry

Engaging occupational safety and health (OSH) professionals has scarcely been evaluated as a means for transferring knowledge to practice about physical workload in the construction industry. The aim of this work was to examine how participants used and incorporate research-based knowledge from a three-day training course into practice. Twenty OSH professionals from the Danish construction industry participated in a workshop-training course. Researchers presented new knowledge and results about physically demanding work. The participants selected which themes they wanted to work with and developed an action plan. Evaluation was done using surveys and phone interviews. Analysis was based on how the OSH-professionals describe themselves, organizations, and the construction industry. Participant's average scores on the level of implementation of their chosen action plans were 3 (on a response scale from 1-5, where 1 is 'to a very low degree' and 5 is 'to a very high degree') immediately after the workshop program and 2.5 at follow-up. Qualitative evaluations showed that actions had been initiated, and some progress

had been made. The participants were satisfied with the workshop course and the possibility to increase their knowledge through inputs from researchers and colleges and strongly believe that they would succeed with implementing their action plans in the future.

Brandt et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Blue collar workers; Construction sector; Construction workers; Musculoskeletal disorders; Occupational risk prevention

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/18/16/8498>

Temperature and work: Time allocated to work under varying climate and labor market conditions

Workers in climate exposed industries such as agriculture, construction, and manufacturing face increased health risks of working on high temperature days and may make decisions to reduce work on high-heat days to mitigate this risk. Utilizing the American Time Use Survey (ATUS) for the period 2003 through 2018 and historical weather data, we model the relationship between daily temperature and time allocation, focusing on hours worked by high-risk laborers. The results indicate that labor allocation decisions are context specific and likely driven by supply-side factors. We do not find a significant relationship between temperature and hours worked during the Great Recession (2008-2014), perhaps due to high competition for employment, however during periods of economic growth (2003-2007, 2015-2018) we find a significant reduction in hours worked on high-heat days. During periods of economic growth, for every degree above 90 on a particular day, the average high-risk worker reduces their time devoted to work by about 2.6 minutes relative to a 90-degree day. This effect is expected to intensify in the future as temperatures rise. Applying the modeled relationships to climate projections through the end of century, we find that annual lost wages resulting from decreased time spent working on days over 90 degrees across the United States range from \$36.7 to \$80.0 billion in 2090 under intermediate and high emission futures, respectively.

Neidell et al. 2021.

PLoS One, vol. 16, no. 8.

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Keywords: Climate; Temperature; Work; Risk

Evidence Level: 4A

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0254224>

More than just "stressful"? Testing the mediating role of fatigue on the relationship between job stress and occupational crashes of long-Haul truck drivers

Introduction: Recent evidence consistently highlights the adverse work environment of long-haul professional drivers, whose task structure typically involves the performance of extensive shifts, driving under stressful working conditions. In this regard, job stress and fatigue - that are highly prevalent in this workforce - seem to play a crucial role in explaining this group's negative traffic safety outcomes. The aim of this study was to assess whether work-related fatigue is a mechanism that mediates the relationship between job stress, health indicators and occupational traffic crashes of long-haul truck drivers (LHTD).

Methods: The data used in this study were collected from 521 Spanish long-haul truck drivers (97% males) from all 17 regions of Spain, with a mean age of 47 years. **Results:** Utilizing structural equation models (SEM), it was found that work-traffic crashes of long-haul truck drivers could be explained through work-related fatigue that exerts a full mediation between job stress (job strain), health-related factors and traffic crashes suffered during the previous two years. **Discussion:** Overall, the findings of this research support that a) stressful working conditions and health issues of drivers have significant effects on traffic crashes, and b) fatigue is a mechanism relating stress-related factors and work-traffic crashes of long-haul drivers. This study highlights the need of stress- and fatigue-management policies and interventions, in order to reduce the crash risk of long-haul truck drivers.

Useche et al. 2021.

Psychology Research and Behavior Management, vol. 7.

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Keywords: Fatigue; Job stress; Long-haul truck drivers; Occupational accidents; Psychosocial factors at work

Evidence Level: 5B

Link: <https://www.dovepress.com/more-than-just-stressful-testing-the-mediating-role-of-fatigue-on-the-peer-reviewed-fulltext-article-PRBM>

Workforce safety in the remote health sector of Australia: A scoping review

Objectives: To scope the evidence surrounding workplace health and safety risks for the remote health workforce in Australia and to collate the recommendations to address those risks. **Design:** A five-stage scoping review framework refined by Cooper *et al* was used for this review. Informit Health Collection, Ovid Emcare, Medline, Web of Science Core Collection, ProQuest and the grey literature were searched in October 2020 using a combination of key words derived from the eligibility criteria. No date restriction was placed on the search. Title and abstract screening, full-text review and data extraction were performed by three reviewers. Data were analysed by the lead author using qualitative thematic analysis. **Eligibility criteria:** Articles were eligible for inclusion if they were published research or industry reports, focused on safety for the remote health workforce in Australia, identified hazards/safety risks or recommendations to reduce risk, and were written in English. **Results:** The search yielded 312 articles, of which 18 met the inclusion criteria. A wide range of hazards/safety risks and recommendations were identified within the literature, which related to safety culture, isolation, safe environment, and education and training. Some recommendations, such as the use of a risk management approach, good post-incident support, safer clinics and accommodation, and improved access to education and training, had been discussed in the literature for over a decade, with a high level of agreement regarding their importance. Two articles briefly evaluated the impact of some recommendations. **Conclusion:** While many recommendations have been developed to improve the safety of the remote health workforce in Australia, there is little evidence of their implementation and evaluation. As many remote health professionals report ongoing or worsening workplace safety issues, there is an urgent need for the implementation and evaluation of the workforce safety strategies recommended in the literature and required by legislation.

Wright et al. 2021.

BMJ Open, vol. 11, no. 8.

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Keywords: Health & safety; Human resource management; Primary care; Protocols & guidelines; Risk management

Evidence Level: 6A

Link: <https://bmjopen.bmj.com/content/11/8/e051345.long>

Risk Assessment

Prevalence of occupational injury and determination of safety climate in small scale manufacturing industry: A cross-sectional study

Background: Occupational injuries are among the most important workplace issues. This study aims to determine the safety climate and prevalence of occupational injuries in the small-scale manufacturing industry. **Methods:** A cross-sectional study with ten small scale manufacturers participated accounting for a total of 300 respondents. Data were collected from July to August 2020 using the NOSACQ-50 questionnaire. **Results:** The prevalence of occupational injury for the past 12 months was at 18%. The most often injured body parts were hands and legs while among the most common injury types were open wound, burns and bleeding. The mean NOSACQ-50 scores for all dimensions are good. The associated factors are working hours per week, and compliance to SOP. There are differences in the mean scores of NOSACQ-50 between injured and non-injured workers across all dimensions. **Conclusion:** The safety climate among manufacturing industry employees is at a good level, while the prevalence of occupational injury is relatively low.

Abidin et al. 2021.

Annals of Medicine and Surgery, vol. 11, no. 69.

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Keywords: Manufacturing industry; Occupational injury; Safety climate.

Evidence Level: 4A

Link: <https://www.sciencedirect.com/science/article/pii/S204908012100649X>

Leveraging strategic foresight to advance worker safety, health, and well-Being

Attending to the ever-expanding list of factors impacting work, the workplace, and the workforce will require innovative methods and approaches for occupational safety and health (OSH) research and practice. This paper explores strategic foresight as a tool that can enhance OSH capacity to anticipate, and even shape, the future as it pertains to work. Equal parts science and art, strategic foresight includes the development and analysis of plausible alternative futures as inputs to strategic plans and actions. Here, we review several published foresight approaches and examples of work-related futures scenarios. We also present a working foresight framework tailored for OSH and offer recommendations for next steps to incorporate strategic foresight into research and practice in order to advance worker safety, health, and well-being.

Streit et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Forecast; Methods and approaches; Occupational safety and health; Scenario; Strategic foresight; Work-related future; Worker well-being

Evidence Level: 6A

Link: <https://www.mdpi.com/1660-4601/18/16/8477>

Chronic Health Issues

Work-related asthma

Work-related asthma (WRA) is highly prevalent in the adult population. WRA includes occupational asthma (OA), which is asthma caused by workplace exposures, and work-exacerbated asthma (WEA), also known as work-aggravated asthma, which is preexisting or concurrent asthma worsened by workplace conditions. In adults, the estimated prevalence of OA is 16.0%, whereas that of WEA is 21.5%. An increasing number of chemicals used in industrial production, households, and services are associated with the incidence of adult-onset asthma attributable to exposure to chemicals. This review article summarizes the different types of WRA and describes diagnostic procedures, treatment, prevention, and approaches to patient management. It is not always easy to distinguish between OA and WEA. It is important to establish a diagnosis (of sensitizer-/irritant-induced OA or WEA) in order to prevent worsening of symptoms, as well as to prevent other workers from being exposed, by providing early treatment and counseling on social security and work-related issues.

Roio et al. 2021.

The Brazilian Journal of Pulmonology, vol. 47, no. 4.

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Keywords: Asthma; Workplace exposure; Adult

Evidence Level: 6A

Link: <https://www.scielo.br/j/jbpneu/a/B8prybFrKXZYHqgtWpkFc8h/?lang=en>

An exploratory analysis of work engagement among women with and without disordered eating

Background: Around 10% of the female population is estimated to have a subclinical eating disorder. Many of these women are of working age. Previous research has shown associations between unhealthy eating behaviors and occupational stress or burnout. However, no previous study has explored the association between disordered eating and work engagement, a positive, fulfilling, affective-cognitive state of mind which has been positioned as the conceptual opposite of burnout. Thus, that was the aim of the present

study. **Methods:** In this cross-sectional study, a sample of 701 Swedish women completed the 9-item Utrecht Work Engagement Scale (UWES-9) and the Eating Disorder Examination Questionnaire (EDE-Q). They were divided into a Healthy Eating (HE) and a Disordered Eating (DE) group based on their EDE-Q scores. The Mann-Whitney U test was used to test the association between disordered eating and work engagement. The Kruskal Wallis test was used to assess the associations between educational level, marital status and age group, and work engagement. **Results:** Neither the UWES scores nor the EDE-Q scores were found to have a normal distribution. Non-parametric testing showed that the DE group reported significantly lower work engagement than the HE group ($p = 0.016$). There were no significant associations between education, marital status or age (independent variables) and work engagement (dependent variable) ($p = 0.826, 0.309, \text{ and } 0.349$, respectively). **Conclusion:** These findings indicate that work engagement may play a role in disordered eating, and that there is a need for future research to consider the workplace environment as a potential source for altering disordered eating behaviors.

Willmer et al. 2021.

BMC Womens Health, vol. 21, no. 1.

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Keywords: Disordered eating; Eating behavior; Occupational health; Work engagement; Workplace health.

Evidence Level: 4A

Link: <https://bmcwomenshealth.biomedcentral.com/articles/10.1186/s12905-021-01429-8>

Cardiovascular health research in the workplace: A workshop report

Heart disease and stroke are the first and fifth leading causes of death in the United States, respectively. Employers have a unique opportunity to promote cardiovascular health, because >60% of US adults are employed, and most spend half of their waking hours at work. Despite the scope of the opportunity, <1 in 5 businesses implement evidence-based, comprehensive workplace health programs, policies, and practices. Integrated, systems-based workplace health approaches that harness data science and technology may have the potential to reach more employees and be cost-effective for employers. To evaluate the role of the workplace in promoting cardiovascular health across the lifespan, the National Heart, Lung, and Blood Institute, the National Institute for Occupational Safety and Health, and the American Heart Association convened a workshop on March 7, 2019, to share best practices, and to discuss current evidence and knowledge gaps, practical application, and dissemination of the evidence, and the need for innovation in workplace health research and practice. This report presents the broad themes discussed at the workshop and considerations for promoting worker cardiovascular health, including opportunities for future research.

Calitz et al. 2021.

Journal of the American Heart Association, vol. 10, no. 17.

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Keywords: Total Worker Health; Cardiovascular health; Knowledge gap; Research; Workplace health

Evidence Level: 6A

Link: <https://www.ahajournals.org/doi/10.1161/JAHA.120.019016>

A systematic review on noncommunicable diseases among working women

The increasing involvement of women in the paid-labor market has led to multifactorial exposure towards the development of noncommunicable diseases (NCDs). This review aims to identify the prevalence of NCDs and the associated risk factors among working women. A systematic review was performed using PubMed and Scopus databases. Twelve articles published between 2015 and 2019 satisfied the inclusion and exclusion criteria and were selected for qualitative synthesis. Among working women, the prevalence of NCDs was as follows: coronary heart disease, 0.3%-5.9%; metabolic syndrome, 52.0%; diabetes mellitus, 8.9%-16.0%; hypertension, 16.6%-66.4%; non-skin cancer, 3.7%. The prevalence of NCD risk factors was as follows: overweight/obesity, 33.8%-77.0%; low physical activity, 51.0%; unhealthy diet, 44.9%-69.9%; dyslipidemia, 27.8%-44.0%. The factors associated with NCDs were long working hours, double work burden, and stress. NCD is an important burden of working women that will lead to reduced work quality and affect family well-being. Disease prevention approaches, such as the intervention of common

workplace risk factors and specific work schedule design, are among the strategies for improving the situation.

Idris et al. 2021.

Industrial Health, vol. 59, no. 3.

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Keywords: Burden; Noncommunicable disease (NCD); Risk factors; Women; Working; Working hours

Evidence Level: 1A

Link: https://www.jstage.jst.go.jp/article/indhealth/59/3/59_2020-0204/article

Occupational risk factors and hypertensive disorders in pregnancy: A systematic review

Hypertensive disorders in pregnancy (HDP), including gestational hypertension (GH) and preeclampsia (PE), characterize a major cause of maternal and prenatal morbidity and mortality. In this systematic review, we tested the hypothesis that occupational factors would impact the risk for HDP in pregnant workers. MEDLINE, Scopus, and Web of Knowledge databases were searched for studies published between database inception and 1 April 2021. All observational studies enrolling > 10 pregnant workers and published in English were included. Un-experimental, non-occupational human studies were excluded. Evidence was synthesized according to the risk for HDP development in employed women, eventually exposed to chemical, physical, biological and organizational risk factors. The evidence quality was assessed through the Newcastle-Ottawa scale. Out of 745 records identified, 27 were eligible. No definite conclusions could be extrapolated for the majority of the examined risk factors, while more homogenous data supported positive associations between job-strain and HDP risk. Limitations due to the lack of suitable characterizations of workplace exposure (i.e., doses, length, co-exposures) and possible interplay with personal issues should be deeply addressed. This may be helpful to better assess occupational risks for pregnant women and plan adequate measures of control to protect their health and that of their children.

Spadarella et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: Maternal employment; Preeclampsia; Risk assessment and management; Women at work; Workplace conditions

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/18/16/8277>

Occupational Exposure

Biomonitoring of occupational exposure to bisphenol A, bisphenol S and bisphenol F: A systematic review

Bisphenol A (BPA) and its substitutes bisphenol S (BPS) and bisphenol F (BPF) are endocrine disrupting chemicals widely used in the production of polycarbonate plastics, epoxy resins and thermal papers. The aim of the review was to identify occupational studies using human biomonitoring (HBM) as a tool for bisphenol exposure assessment and to characterize research gaps on the topic as part of the HBM4EU project. Hence, a systematic literature search using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was conducted for articles published between 2000 and 27th March 2020 across three databases (PubMed, Scopus and Web of Science). Thirty studies on the occupational HBM of BPA met the inclusion criteria. Regarding BPS and BPF, only 4 and 2 publications were retrieved, respectively. Fifty-seven percent (57%) of the studies selected for BPA were conducted in Asia whereas half of BPS and BPF studies were undertaken in Europe. Studies on BPA in plastic and epoxy resin sectors were infrequent in Europe while Asian data showed higher exposure when the substance is employed as raw material. The main data on BPS were among cashiers while BPF data were available from incinerator workers. Several research gaps have been identified: (i) shortage of HBM studies on occupational exposure, especially to BPS and BPF; (ii) different methodological designs making suitable comparisons between studies difficult; and (iii) only few studies conducted on the industrial applications of

bisphenols outside Asia. This review highlights the lack of recent occupational HBM studies on bisphenols and the need for a harmonized approach to acquire reliable data. Considering the increasing replacement of BPA by BPS and BPF, it is of relevance to evaluate the exposure to these substances and the impact of the available risk management measures on workers exposure and possible health risk.

Bousoumah et al. 2021.

The Science of the Total Environment, vol. 20.

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Keywords: Biomonitoring; Bisphenols; Endocrine disrupters; Exposure assessment; Occupational health

Evidence Level: 1A

Link: <https://www.sciencedirect.com/science/article/pii/S0048969721019756?via%3Dihub>

A quantitative risk assessment of sinonasal cancer as a function of time in workers occupationally exposed to wood dust

Objectives: The aim of this study is to conduct a quantitative assessment of the risk related to occupational exposure to wood dust and the occurrence of sinonasal epithelial cancer (SNEC) by histotype, depending on the duration of exposure, using mathematical models. **Material and methods:** The relationship between the occurrence of SNEC by histotype (adenocarcinoma [AR] and tumors of other histotypes) and exposure to wood dust has been studied using the values of the odds ratios for individual periods of employment involving exposure to wood dust, and their 95% confidence intervals. The dose-response curves were constructed (more precisely, the duration of exposure-response curves). The author attempted to match the linear, quadratic or exponential models. **Results:** In all SNEC cases, there is a relationship between the duration of occupational exposure to wood dust and the relative risk of developing cancer. The estimated relative risk of developing AR after 35 years of exposure to wood dust is about 300, and the estimated risk of developing SNEC is 50, compared to non-exposed people for whom the relative risk is equal to 1. However, the relative risk of developing other types of cancer is <20, also in comparison with non-exposed people. **Conclusions:** The author has identified a relationship between the duration of occupational exposure to wood dust and the relative risk of developing cancer in all SNEC cases. *Int J Occup Med Environ Health.* 2021;34(4):541-9.

Soćko 2021.

International Journal of Occupational Medicine and Environmental Health, vol. 34, no. 4.

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Keywords: Carcinogenicity; Mathematical models; Nasal cancer; Occupational exposure; Risk assessment; Wood dust

Evidence Level: 5A

Link: <http://ijomeh.eu/A-quantitative-risk-assessment-of-sinonasal-cancer-as-a-function-of-time-in-workers,130672,0,2.html>

Impact of temporal variability of radon concentration in workplaces on the actual radon exposure during working hours

For workplaces where significant diurnal variations in radon concentrations are likely, measurements to evaluate average radon concentration during working hours could be useful for planning an optimized protection of workers according to the 2013/59/Euratom Directive. However, very few studies on this subject, generally limited to periods of few weeks, have been published. Therefore, a study has been conducted to evaluate the actual long-term radon exposure during working hours for a sample of 33 workplaces of four different types (postal offices, shops, restaurants, municipal offices), mainly located at the ground floor, and with expected considerable air exchange rate occurring during working hours due to frequent entrance/exit of persons or mechanical ventilation. The results show that the difference between the average radon level during working hours and that one during the whole day is about 20% on average and ranges from 0 to 50%. These observed differences, generally smaller compared with those found in other similar studies, are nearly the same if the analysis is restricted to workplaces with annual radon level higher than 300 Bq m⁻³, and therefore natural or mechanical ventilation normally present during working hours of the monitored workplaces cannot be considered an effective mitigation measure. However, the

costs and time-response characteristics of the active monitors, as those used for the present study, will probably allow using more frequently a similar measurement strategy in workplaces.

Venoso et al. 2021.

Scientific Reports, vol. 11, no. 1.

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Keywords: Radon concentration; Working hours; Workers

Evidence Level: 5B

Link: <https://www.nature.com/articles/s41598-021-96207-9>

Occupational exposure and risk of colon cancer: a nationwide registry study with emphasis on occupational exposure to zoonotic gastrointestinal pathogens

Objectives: While colon cancer (CC) risk is associated with several lifestyle-related factors, including physical inactivity, smoking and diet, the contribution of occupation to CC morbidity remains largely unclear. Growing evidence indicates that gastrointestinal infections like salmonellosis could contribute to CC development. We performed a nationwide registry study to assess potential associations between occupation (history) and CC, including also those occupations with known increased exposure to gastrointestinal pathogens like *Salmonella*. **METHODS:** Person-level occupational data for all residents in The Netherlands were linked to CC diagnosis data. Differences in the incidence of (overall, proximal and distal) CC among occupational sectors and risk groups were tested for significance by calculating standardised incidence ratios (SIRs) with 95% CIs using the general population as reference group. Effects of gender, age, exposure duration and latency were also assessed. **Results:** Significant differences in CC incidence were observed only for a few occupational sectors, including the manufacturing of rubber and plastics, machinery and leather, the printing sector and the information service sector (SIRs 1.06-1.88). No elevated risk of CC was observed among people with increased salmonellosis risk through occupational exposure to live animals, manure or among those working in the sale of animal-derived food products (SIRs 0.93-0.95, 0.81-0.95 and 0.93-1.09 for overall, proximal and distal CC, respectively). **Conclusions:** The results of this study suggest that occupation in itself provides a relatively small contribution to CC incidence. This is consistent with previous studies where a similar degree of variation in risk estimates was observed. The lack of an association with the high-risk occupations for salmonellosis might be due to higher levels of physical activity, a known protective factor for CC and other diseases, of people working in the agricultural sector, which might outweigh the potential *Salmonella*-associated risk of CC.

Duijster et al. 2021.

BMJ Open, vol. 11, no. 8.

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Keywords: Epidemiology; Gastrointestinal tumours; Infectious diseases; Occupational & industrial medicine

Evidence Level: 4A

Link: <https://bmjopen.bmj.com/content/11/8/e050611.long>

Association between occupational exposures and sarcoma incidence and mortality: Systematic review and meta-analysis

Background: Sarcomas are a rare and heterogeneous group of tumors originating from mesenchymal or connective tissue. They represent less than 1% of all adult cancers. The etiology and epidemiology of sarcomas remain understudied and poorly understood. The main objective of our study was to systematically assess the association between various occupational exposures and risk of sarcomas.

Methods: We performed a systematic literature search using the PubMed, Scopus, EMBASE and Cochrane databases to identify relevant cohort and case-control studies. A meta-analysis method was applied on the incidence and mortality outcomes where the estimate with 95% confidence interval (CI) was obtained.

Results: We included a total of 50 publications in our systematic review and 35 in meta-analysis. For exposures to phenoxy herbicides and chlorophenols, the pooled odds ratio (OR) for sarcoma was 1.85 (95% CI: 1.22, 2.82), based on 16 studies with 2254 participants, while the pooled standardized mortality ratio was 40.93 (95% CI 2.19, 765.90), based on 4 cohort studies with 59,289 participants. For exposure to vinyl chloride monomers the pooled risk ratios for angiosarcoma of the liver and other STS were 19.23 (95% CI 2.03, 182.46) and 2.23 (95 CI 1.55, 3.22) respectively based on 3 cohort studies with 12,816 participants.

Exposure to dioxins was associated with an increased STS mortality; the pooled standardized mortality ratio was 2.56 (95% CI 1.60, 4.10) based on 4 cohort studies with 30,797 participants. Finally, woodworking occupation was associated with an increased risk of STS with the pooled OR of 2.16 (95% CI 1.39, 3.36).

Conclusions: Our findings suggest a positive association between higher exposure to dioxins and increased mortality from STS, between cumulative exposure to vinyl chloride monomers and increased mortality from angiosarcoma of the liver and STS, and between woodworking occupation and STS incidence. These findings were all statistically significant.

Edwards et al. 2021.

Systematic Reviews, vol. 10, no. 1.

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Keywords: Agent Orange; Chlorophenols; Dioxin; Epidemiology; Occupational exposure; Pesticide; Phenoxy herbicide; Sarcoma; Soft-tissue sarcoma; Vinyl chloride monomers

Evidence Level: 1A

Link: <https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/s13643-021-01769-4>

Musculoskeletal Health

Work-related and personal factors in shoulder disorders among electronics workers: Findings from an electronics enterprise in Taiwan

Background: The electronics industry is one of the largest global industries, and significant numbers of workers are engaged in this industry. Evidence suggests two associations, including one between ergonomic risks and shoulder disorders and another between psychological stress and psychological problems among workers in this industry. Investigations on ergonomic risks, psychological stress, and sex effects for shoulder disorders in this industry are limited. This study aimed to explore personal and work-related factors associated with shoulder disorders and to investigate the combined effect of similar ergonomic risk factors. **Methods:** In this cross-sectional study, 931 workers aged 20 to 58 from an electronics factory in Taiwan were recruited. A Nordic musculoskeletal questionnaire was used to assess shoulder symptoms. Sociodemographic factors and work-related factors, including psychological stress, were assessed. One hundred random sample workers with shoulder symptoms underwent a standardized clinical test for the evaluation of subacromial impingement syndrome. The ergonomic risks were assessed by the risk filter of 'upper limb disorders in the workplace', including repetition, posture, force, vibration, and duration of exposure. **Results:** The prevalence of shoulder symptoms was 30.5, and 19% of those with shoulder symptoms had subacromial impingement syndrome. In multivariable analyses, older age (adjusted odds ratio (aOR) = 1.37, 95% CI 1.01-1.86), repetition (aOR = 1.73, 95% CI 1.15-2.60) and posture (aOR = 1.85, 95% CI 1.10-3.11) were associated with shoulder symptoms. Regarding the gender effect, older age (aOR = 1.46, 95% CI 1.01-2.11), repetition (aOR = 1.64, 95% CI 1.00-2.68), posture (aOR = 1.89, 95% CI 1.01-3.52), and force (aOR = 1.68, 95% CI 0.99-2.85) were associated with shoulder symptoms in men, whereas posture (aOR = 2.12, 95% CI 0.99-4.57) was associated with symptoms in women. **Conclusions:** This study implies that repetition and posture are important risk factors for shoulder disorders in the electronics industry. The risk exhibited sex differences, and force was more important for shoulder disorders in men. Such information is useful to help occupational health practitioners and policy makers conduct preventive programmes on shoulder disorders in this working population. Future longitudinal studies on work-related shoulder disorders are warranted.

Chu et al. 2021.

BMC Public Health, vol. 21, no. 1.

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Keywords: Posture; Repetition; Shoulder; Work-related

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11572-4>

Prevalence of musculoskeletal pain and associated disability among professional bus drivers: A cross-sectional study

Purpose: Professional bus drivers risk developing musculoskeletal pain (MSP) and disability due to their working condition. The current study investigates the prevalence rate of MSP and disability among professional bus drivers. **Methods:** A cross-sectional study was conducted among 83 professional bus drivers. The prevalence rate of MSP was evaluated using a standardized Nordic musculoskeletal questionnaire. The disabilities due to the MSP were evaluated using neck disability index (NDI), Oswestry disability index (ODI) and shoulder pain and disability index (SPADI) tools. Prevalence of MSP was presented with 95% of confidence interval (CI) at an alpha level of 0.05. The 12 months and 7 days prevalence of MSP were tabulated for analysing the trend of MSP between the upper and lower body regions. **Results:** The drivers had a mean driving experience of 10.07 ± 7.26 years. The mean driving hours/week were 50.25 ± 12.82 h. Neck and back were the most affected regions with a prevalence rate of 81.9% (N = 68) and 80.7% (N = 67) at 12 months. Back region recorded the highest 7 days prevalence rate for MSP with 53% (N = 44). Approximately one fourth of the bus drivers population (23.9%, N = 16) had moderate disability in back region. More than half with MSP in the neck region presented mild disability (54.4%, N = 37).

Conclusion: The bus drivers reported a high prevalence rate of MSP in the neck, back and shoulder regions with mild to moderate disabilities. Appropriate health care and rehabilitation programs are necessary for the prevention and management of MSP among the bus drivers.

Kasemsan et al. 2021.

International Archives of Occupational and Environmental Health, vol. 94, no. 6.

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Keywords: Musculoskeletal pain; Disability; Bus drivers

Evidence Level: 4A

Link: <https://link.springer.com/article/10.1007%2Fs00420-021-01683-1>

Landscaping work: Work-related musculoskeletal problems and ergonomic risk factors

Background: Work-related musculoskeletal disorders (WRMSDs) are considered one of the foremost reason of disability globally with significant economic impact due to loss of productivity. Landscaping work is considered a high-risk industry in the service sector. Landscape workers are susceptible to WRMSDs as they are exposed to high physical demands at work, and exert significant physical effort to complete daily repetitive tasks during long working hours. The aim of this study was to determine the prevalence of WRMSDs and to identify the ergonomic risk factors among landscape workers in a university setting.

Methods: This was a cross-sectional study conducted among landscape workers at a public university in Kota Kinabalu, Sabah. Interviews were conducted due to low literacy of the participants, using structured questionnaires which consist of personal characteristics, work descriptions, ergonomic risk factors, as well as self-reported WRMSD symptoms using NORDIC questionnaire. Ergonomic risk assessment (ERA) using rapid entire body assessment (REBA) was then conducted. **Results:** Fifty-five of 60 landscape workers agreed to participate (92% response rate). The overall prevalence of WRMSDs among landscape workers was 85.5%. The highest prevalence involving the shoulder (65.5%), followed by neck (23.6%), wrist/hand (23.6%), and lower back (20.0%) regions based on their self-reported WRMSD symptoms over the past 12 months. Awkward posture was the risk factor identified through ergonomic risk assessment (ERA) conducted by ERA trained personnel. None of the working postures during assessment was noted to be appropriate. Although no significant difference was associated with self-reported WRMSDs, majority of the landscape workers (71%) were classified as medium ergonomic risk group using REBA, with the remaining 29% considered to be high ergonomic risk group. **Conclusion:** Improvement in awareness campaigns, modification of working tools, and enhanced administrative approaches are among the control and prevention measures recommended to delay or prevent the occurrence of WRMSDs.

Lim et al. 2021.

Risk Management and Healthcare Policy, vol. 17.

User License: *Creative Commons Attribution-NonCommercial 3.0 (CC BY-NC 3.0)* (<https://creativecommons.org/licenses/by-nc/3.0/>)

Keywords: REBA; Awkward posture; Landscape workers; Rapid entire body assessment; Work-related musculoskeletal disorders

Evidence Level: 4A

Link: <https://www.dovepress.com/landscaping-work-work-related-musculoskeletal-problems-and-ergonomic-r-peer-reviewed-fulltext-article-RMHP>

A deep-learning based posture detection system for preventing telework-related musculoskeletal disorders

The change from face-to-face work to teleworking caused by the pandemic has induced multiple workers to spend more time than usual in front of a computer; in addition, the sudden installation of workstations in homes means that not all of them meet the necessary characteristics for the worker to be able to position himself/herself comfortably with the correct posture in front of their computer. Furthermore, from the point of view of the medical personnel in charge of occupational risk prevention, an automated tool able to quantify the degree of incorrectness of a postural habit in a worker is needed. For this purpose, in this work, a system based on the postural detection of the worker is designed, implemented and tested, using a specialized hardware system that processes video in real time through convolutional neural networks. This system is capable of detecting the posture of the neck, shoulders and arms, providing recommendations to the worker in order to prevent possible health problems, due to poor posture. The results of the proposed system show that this video processing can be carried out in real time (up to 25 processed frames/sec) with a low power consumption (less than 10 watts) using specialized hardware, obtaining an accuracy of over 80% in terms of the pattern detected.

Piñero-Fuentes et al. 2021.

Sensors, vol. 21, no. 15.

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Keywords: Convolutional neural network; e-health; Posture; Skeleton; Telework

Evidence Level: 6B

Link: <https://www.mdpi.com/1424-8220/21/15/5236>

COVID 19

Adapting to the Future of Work

Prevalence of, and factors associated with, long-term COVID-19 sick leave in working-age patients followed in general practices in Germany

Objectives: To investigate the prevalence of, and the factors associated with, long-term sick leave in working-age patients diagnosed with COVID-19 in general practices in Germany. **Methods:** Patients aged 18-65 years diagnosed with COVID-19 in any of 1255 general practices in Germany between March 2020 and February 2021 were included in the study. Long-term sick leave was defined as sick leave of at least 4 weeks. The association between predefined independent variables and long-term sick leave was studied using an adjusted logistic regression model. **Results:** This study included 30 950 patients diagnosed with COVID-19 (51.7% women, mean (standard deviation) age 41.5 (\pm 13.0) years). The prevalence of long-term sick leave was 5.8%. Female sex, older age, and several conditions (noninfective enteritis and colitis; reaction to severe stress, and adjustment disorders; atopic dermatitis; mononeuropathies; reflux diseases; diabetes mellitus; and hypertension) were positively and significantly associated with long-term sick leave. **Conclusion:** Long-term sick leave was relatively rare in COVID-19 patients followed in general practices in Germany. These results should be confirmed or invalidated in other settings and countries.

Jacob et al. 2021.

International Journal of Infectious Diseases, vol. 109

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Keywords: COVID-19; Germany; Coronavirus disease; General practices; Long-term sick leave

Evidence Level: 4B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S1201-9712\(21\)00552-X](https://linkinghub.elsevier.com/retrieve/pii/S1201-9712(21)00552-X)

Trade-off between job losses and the spread of COVID-19 in Japan

This paper quantitatively analyzes the trade-off between job losses and the spread of COVID-19 in Japan. We derive an empirical specification from the social planner's resource constraint under the susceptible, infected, recovered, and deaths (SIRD) model and estimate how job losses and the case growth rate are related to people's mobility using the Japanese prefecture-level panel data on confirmed cases, involuntary job losses, people's mobility, and teleworkability. Our findings are summarized as follows. First, we find that a decrease in mobility driven by containment policies is associated with an increase in involuntary job separations, but the high teleworkability mitigates the negative effect of decreased mobility on job losses. Second, estimating how the case growth is related to people's mobility and past cases, we find that the case growth rate is positively related to an increase in people's mobility but negatively associated with past confirmed cases. Third, using these estimates, we provide a quantitative analysis of the trade-off between job losses and the number of confirmed cases. Taking Tokyo in July 2020 as a benchmark, we find that the cost of saving 1 job per month is 2.3 more confirmed cases per month in the short run of 1 month. When we consider a trade-off for 3 months from July to September of 2020, protecting 1 job per month requires 6.6 more confirmed cases per month. Therefore, the trade-off becomes worse substantially in the longer run of 3 months, reflecting the exponential case growth when the people's mobility is high.

Hoshi et al. 2021.

Japanese Economic Review, vol. 25.

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Keywords: Mobility; Panel data analysis; SIRD model; Teleworkability

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8384925/>

Guiding and Supporting Mental Health and Wellbeing

Work-life balance of the employed population during the emergency situation of COVID-19 in Latvia

All the employees face the challenge of finding the right work-life balance. The ability of employees to deal with the successful combining of work, family responsibilities, and personal life is crucial for both employers and family members of employees. During the COVID-19 emergency situation, many people around the world were forced to work remotely. Initially, there were observed some certain expectations about the possibility of working from home as a positive factor that will promote work-life balance. However, over time, negative tendencies were also revealed, as employees were only one call or message away from the employer, and uncertainty and leisure time with family often created more stress. As many organizations and individuals were not ready for this sudden change, many mistakes were made, which further raised the issue of work-life balance. The aim of the research was to evaluate the flexibility of reconciling work and private life of Latvian employees in various socio-demographic groups during the COVID-19 emergency situation in spring 2020, to investigate how family life influenced employees' ability to perform work duties, to find out if employees had any additional housework responsibilities and how their workload changed concerning housework amount during the COVID-19 emergency situation. The research is based on the data obtained in the survey of the Latvian employed population, which was conducted within the framework of the Latvian National Research Programme Project "CoLife" in the second half of 2020. As a result, the hypothesis of the research that all groups of employees experienced work-life balance difficulties during the COVID-19 emergency situation has been partially confirmed, i.e., women in the 18-44 age group and respondents with minor children in the household more likely faced difficulties of work-life balance. The scientific research methods that were used in the research are the monographic method, content analysis, survey, data processing with SPSS to determine the mutual independence of the data from the questionnaires.

Lonska et al. 2021.

Frontiers in Psychology, vol. 6.

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Keywords: COVID-19; Homework; Remote working; Teleworking; Work–life balance

Evidence Level: 5B

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8377232/>

Mental health and the perceived usability of digital mental health tools among essential workers and people unemployed due to COVID-19: Cross-sectional survey study

Background: COVID-19 has created serious mental health consequences for essential workers or people who have become unemployed as a result of the pandemic. Digital mental health tools have the potential to address this problem in a timely and efficient manner. **Objective:** The purpose of this study was to document the extent of digital mental health tool (DMHT) use by essential workers and those unemployed due to COVID-19, including asking participants to rate the usability and user burden of the DMHT they used most to cope. We also explored which aspects and features of DMHTs were seen as necessary for managing stress during a pandemic by having participants design their own ideal DMHT. **Methods:** A total of 2000 people were recruited from an online research community (Prolific) to complete a one-time survey about mental health symptoms, DMHT use, and preferred digital mental health features. **Results:** The final sample included 1987 US residents that identified as either an essential worker or someone who was unemployed due to COVID-19. Almost three-quarters of the sample (1479/1987, 74.8%) reported clinically significant emotional distress. Only 14.2% (277/1957) of the sample used a DMHT to cope with stress associated with COVID-19. Of those who used DMHTs to cope with COVID-19, meditation apps were the most common (119/261, 45.6%). Usability was broadly in the acceptable range, although participants unemployed due to COVID-19 were less likely to report user burden with DMHTs than essential workers ($t_{198.1} = -3.89, P < .001$). Individuals with emotional distress reported higher financial burden for their DMHT than nondistressed individuals ($t_{69.0} = -3.21, P = .01$). When the sample was provided the option to build their own DMHT, the most desired features were a combination of mindfulness/meditation (1271/1987, 64.0%), information or education (1254/1987, 63.1%), distraction tools (1170/1987, 58.9%), symptom tracking for mood and sleep (1160/1987, 58.4%), link to mental health resources (1140/1987, 57.4%), and positive psychology (1131/1986, 56.9%). Subgroups by employment, distress, and previous DMHT use status had varied preferences. Of those who did not use a DMHT to cope with COVID-19, most indicated that they did not consider looking for such a tool to help with coping (1179/1710, 68.9%). **Conclusions:** Despite the potential need for DMHTs, this study found that the use of such tools remains similar to prepandemic levels. This study also found that regardless of the level of distress or even past experience using an app to cope with COVID-19, it is possible to develop a COVID-19 coping app that would appeal to a majority of essential workers and unemployed persons.

Mata-Greve et al. 2021.

JMIR Mental Health, vol. 8, no. 8.

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Keywords: COVID-19; Digital health; Distress; e-mental health; Essential worker; Mental health; Survey; Unemployed; Usability; User burden

Evidence Level: 4A

Link: <https://mental.jmir.org/2021/8/e28360/>

Employee psychological well-being during the COVID-19 pandemic in Germany: A longitudinal study of demands, resources, and exhaustion

Many governments react to the current coronavirus/COVID-19 pandemic by restricting daily (work) life. On the basis of theories from occupational health, we propose that the duration of the pandemic, its demands (e.g., having to work from home, closing of childcare facilities, job insecurity, work-privacy conflicts, privacy-work conflicts) and personal- and job-related resources (co-worker social support, job autonomy, partner support and corona self-efficacy) interact in their effect on employee exhaustion. We test the hypotheses with a three-wave sample of German employees during the pandemic from April to June 2020 (Nw1 = 2900, Nw12 = 1237, Nw123 = 789). Our findings show a curvilinear effect of pandemic duration on working women's exhaustion. The data also show that the introduction and the easing of lockdown measures affect exhaustion, and that women with children who work from home while childcare is unavailable are especially exhausted. Job autonomy and partner support mitigated some of these effects. In sum, women's psychological health was more strongly affected by the pandemic than men's. We discuss

implications for occupational health theories and that interventions targeted at mitigating the psychological consequences of the COVID-19 pandemic should target women specifically

Meyer et al. 2021.

International Journal of Psychology, vol. 56, no. 4.

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Keywords: Corona; Demands; Exhaustion; Lockdown measures; Resources

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/ijop.12743>

Enabling Healthy and Safe Workplaces

Worksite temperature screening for COVID-19

Objective: To determine whether temperature screening is useful in detecting and reducing workplace transmission of SARS-CoV-2. **Methods:** A survey was conducted to determine whether temperature screening successfully identified workers with coronavirus disease 2019 (COVID-19) among a convenience sample of medical directors of multinational corporations in a wide range of industries. **Results:** More than 15 million screenings were performed by 14 companies. Fewer than 700 episodes of fever were identified. Of these, only about 53 cases of COVID-19 were detected. By contrast about 2000 workers with diagnosed COVID-19 were in the workplace and not detected by screening. **Conclusions:** One case of COVID-19 was identified by screening for approximately every 40 cases that were missed. Worksite temperature screening was ineffective for detecting workers with COVID-19 and is not recommended.

Stave et al. 2021.

Journal of Occupational and Environmental Medicine, vol. 63, no. 8.

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Keywords: Worksite temperature screening; Workplace transmission; COVID-19

Evidence Level: 5A

Link:

https://journals.lww.com/joem/Fulltext/2021/08000/Worksite_Temperature_Screening_for_COVID_19.2.aspx

Fitness for work during the COVID-19 disease: Principles and suggested assistive tool for protecting workers during the pandemic era

Objective: Amongst the many intricacies engendered by the COVID-19 pandemic was the posed risk of exposure to SARS-COV2 infections among workers and the need to evaluate fitness for work (FFW) of individuals in high exposure groups or those with background morbidity. A designated task force of the Israeli Association of Occupational Medicine has evaluated the relevant literature and published guidelines concerning medical work restrictions for employees in high-risk occupations during the epidemic of novel COVID-19. **Methods:** The study depicts a case series of 17 FFW evaluations performed in Maccabi Health Services occupational clinics using the guidelines formulated by the Israeli Occupational Medicine Association. **Results:** 17 patients, mainly healthcare workers, whose major health hazards were immunodeficiency, respiratory diseases and pregnancy, were assessed in this case series. We present the essential parameters of these FFW evaluations and discuss decision-making in selected cases. **Conclusions:** Applying guidelines in various work settings and health risk levels during the SARS-CoV-2 pandemic allows for both patients' health preservation and efficient workforce deployment.

Sahar Kostis et al. 2021.

International Archives of Occupational and Environmental Medicine, vol. 94, no. 6.

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Keywords: Clinical guidelines; Health risk assessment; Occupational exposure; Occupational groups (workers, healthcare workers); Occupational medicine (occupational health practice, exposure assessment, risk assessment)

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1007%2Fs00420-021-01722-x>

The impact of COVID-19 pandemic on workplace accidents in Korea

Background: Although the number of people infected with COVID-19 has increased over time, its effects on workplace accidents are still poorly understood. On the one hand, COVID-19 can reduce workplace accidents through contracted economic activities or changes in work methods. On the other hand, it can increase workplace accidents by spreading in the workplace. The main purpose of this paper is to examine how COVID-19 affected workplace accidents in Korea during the early part of the pandemic. **Methods:** This paper utilizes the administrative data on workplace accidents in Korea collected by Korea Occupational Safety and Health Agency. In particular, we use monthly data from February 2016 to August 2020. This period was chosen to rule out the effect from the Middle East Respiratory Syndrome outbreak in 2015 and to include COVID-19 effects in 2020, given the available data. To examine the impact of COVID-19 on workplace injury and illness, we estimate fixed effects regression models, allowing us to control for group and time effects. **Results:** COVID-19 was generally found to reduce workplace accidents in Korea, particularly through a reduction in occupational diseases. However, we also found that COVID-19 increased occupational injuries for males and workers in the transportation industry. We provide some evidence that these workers experienced an increase in workload and were unable to change work methods including working from home during the COVID-19 pandemic. **Conclusions:** Our results indicate that to reduce workplace accidents, government interventions should be directed at workers who are unable to change work methods and who are likely to suffer an increase in work burden due to COVID-19.

Baek et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: COVID-19; Gender; Industry; Workplace accidents

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/18/16/8407>

How does the assessment of work organization during the COVID-19 pandemic relate to changes in the well-being of health system workers?

In the case of various emergencies, especially pandemics, healthcare workers are faced with disproportionate pressures. Organizational support plays a significant role in protecting the psychological and physical health of healthcare workers. This interdisciplinary research aims to determine how changes in the physical and psychological well-being of healthcare and pharmacy workers during the first wave of the COVID-19 lockdown are related to work organization factors that support safety and stability. A quantitative research strategy was applied in the research. Data from an electronic survey assessed the changes in the physical and psychological well-being of healthcare and pharmacy workers during the lockdown period and the organizational factors supporting safety and stability. The sample of the quantitative research consisted of 967 employees of healthcare institutions and pharmacies in Lithuania. This research broadens the concept of organizational factors and provides data on their interaction with the changes of employee well-being indicators in a pandemic situation. It was found that positive changes in the evaluation of physical as well as psychological well-being during the COVID-19 lockdown could be consistently predicted by all the analyzed safety and stability supporting organizational factors that were found to be associated with subjective physical well-being and psychological well-being even when adjusting for the effect of socio-demographic factors (gender, age, work field, and specialty). The identification and proper management of organizational factors was significant for the psychological and physical well-being of healthcare workers during the lockdown period. It was found that all estimates of safety and stability supporting organizational factors during the first wave of the COVID-19 pandemic lockdown were positively related and could act as protective factors to the subjective physical and psychological well-being of healthcare and pharmacy workers.

Kubilienė et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 15.

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Keywords: COVID-19 pandemic; Mental health; Organizational factors; Survey; Well-being of healthcare workers

Evidence Level: 5A

Link: <https://www.mdpi.com/1660-4601/18/15/8202>

The smart safeguard system for COVID-19 to prevent cluster-infection in workplaces

The ongoing Coronavirus Disease 2019 (COVID-19) broke out in China since December 2019, and rapidly spread worldwide. To contain the disease, unessential businesses had been shut down in several countries to a varying extent. Nowadays, the enterprises are resuming productions and businesses. While the resumption of production is crucial to social development, it elevates the risk of cluster-infections at the workplaces. Guangdong Second Provincial General Hospital therefore set up the Smart Safeguard System for COVID-19, aiming to provide rapid screening and consistent protection to assist the local enterprises with resumption. The system has received positive feedback as being helpful and practical. It has the potential to be widely used to prevent the cluster-infection of COVID-19 at workplaces during the pandemic.

Li et al. 2021.

Journal of Infection and Public Health, vol. 14, no. 8.

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Keywords: Health and safety; Occupational health practice; Occupational hygiene; Preventive medicine; Viruses

Evidence Level: 6B

Link: <https://www.sciencedirect.com/science/article/pii/S1876034121001647?via%3Dihub>

COVID-19 stressors on migrant workers in Vietnam: Cumulative risk consideration

This study explored the impact of COVID-19 on migrant workers in Vietnam, using a cumulative risk assessment (CRA) framework which comprises four domains (workplace, environment, individual and community). A cross-sectional study was conducted. Data were collected in 2020 through a self-administered questionnaire with 445 domestic migrant workers in two industrial zones in two northern provinces (Bac Ninh and Ninh Binh) in Vietnam. The majority of migrant workers were female (65.2%), aged between 18 and 29 years old (66.8%), and had high school or higher education level qualifications. Most migrant workers had good knowledge about preventive measures (>90%) and correct practices on COVID-19 prevention (81.1%). Three health risk behaviors were reported: 10% of participants smoked, 25% consumed alcohol and 23.1% were engaged in online gaming. In terms of workplace, occupational working conditions were good. Noise was the most commonly reported hazard (29%). Regarding environment, about two-thirds of migrant workers lived in a small house (<36 m²). Most participants (80.4%) lived with their families. About community domain, many reported low salary or losing their job during January-July, 2020. Most migrants received information about COVID-19. The migrant workers suffered from poor health and low occupational safety, fear of job loss and income cut, poor housing and living conditions and limited access to public services. The holistic approach to address stressors is recommended to improve health and safety of migrant workers.

Bui et al. 2021.

International Journal of Environmental Research and Public Health, vol. 18, no. 16.

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Keywords: COVID-19; Vietnam; Cumulative risk assessment (CRA); Industrial zones; Migrant workers

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/18/16/8757>

Fostering work participation

Work and non-work sickness presenteeism: The role of workplace COVID-19 climate

Objective: To test the role of workplace coronavirus disease (COVID-19) climate in shaping employee attitudes toward the CDC prevention guidelines and subsequent levels of work and non-work sickness presenteeism. **Methods:** Three waves of anonymous survey data were collected in October and December 2020 and February 2021. Participants were 304 employed adults in the U.S., of whom half were working onsite. **Results:** Time 1 workplace COVID-19 climate was positively associated with Time 2 employee attitudes toward the CDC prevention guidelines, which in turn predicted Time 3 levels of non-work and work sickness presenteeism. **Conclusions:** The workplace can shape employee attitudes toward the CDC COVID-19 prevention guidelines and their work and non-work sickness presenteeism, thus highlighting the important role companies have in reducing community spread of the novel coronavirus in work and non-work settings.

Probst et al. 2021.

Journal of Occupational and Environmental Medicine, vol. 63, no. 8.

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

Keywords: Non-work sickness, COVID-19; Climate; Employee attitudes

Evidence Level: 4A

Link:

https://journals.lww.com/joem/Fulltext/2021/08000/Work_and_Non_Work_Sickness_Presenteeism_The_Role.13.aspx