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Journal articles marked with an asterisk indicate an IWH scientist or adjunct scientist is included in the list of authors.

Baba N, Tanimura A, and Ishi Y. Subjective perceptions that affect the continued employment of persons with mental disabilities in Japan: a mixed-methods study. *Work*. 2023; 75(2):711-727.

<https://doi.org/10.3233/WOR-220144>

Abstract: BACKGROUND: Among people with mental disabilities in Japan, 50.7% have left employment within a year despite the provision of employment support. Their subjective perceptions are likely relevant, as many causes for leaving employment are personal. However, thus far, employment continuity assessment has been based on objective indicators, while subjective evaluation remains underdeveloped. OBJECTIVE: We conducted a mixed-methods study to identify the subjective characteristics that impact the ability of persons with mental disabilities to continue working while receiving employment support. METHODS: In total, 41 participants with mental disabilities in continuous employment were included in the study, and data were collected using a demographic and employment status questionnaire and the Worker's Role Interview. Further, to clarify the constructs related to subjective perceptions of work continuity, the step for coding and theorization (SCAT) method was utilized. RESULTS: The results revealed five overarching superordinate concepts and 12 subordinate concepts of subjective perceptions regarding maintaining the current work and the future for participants who continue to work. These perceptions may be related to the participants' experience and the time course of work continuity. Subjective perceptions of difficulty levels were found to be the most and the least difficult for a

reasonable accommodation without specific rules and awareness of the effects of work concepts, respectively. **CONCLUSION:** This research could facilitate the development of an employment support system based on people with mental disabilities' subjective needs, thus contributing to their continued employment

Bjork-Fant JM, Bolander P, and Forsman AK. Work-life balance and work engagement across the European workforce: a comparative analysis of welfare states. *European Journal of Public Health*. 2023; 33(3):430-434.

<https://doi.org/10.1093/eurpub/ckad046> [open access]

Abstract: **BACKGROUND:** Few large-scale, comparative studies have examined both the positive mental well-being outcomes of work-life balance and the broader socio-economic context by which it is shaped. Therefore, the aim of this study was to investigate the association between work-life balance and work engagement across a wide range of European welfare states, as well as to examine whether work-life balance varies across European countries and whether this variance can be explained by welfare regime, controlling for individual-level factors. **METHODS:** This study utilized data from the 2015 European Working Conditions Survey. In total, 35 401 workers from 30 European countries could be classified into the adopted welfare regime typology. Work engagement was measured using an ultra-short version of the Utrecht Work Engagement Scale, and work-life balance with a question on the fit between working hours and family or social commitments. Due to the hierarchical structure of the data, multilevel regression models were applied. **RESULTS:** A statistically significant positive association between work-life balance and work engagement across the European workforce was found. Between-country variance in work-life balance was demonstrated and this can in part be explained by welfare regime. **CONCLUSIONS:** While it has long been recognized that occupational stress and work-related mental health problems are shaped by the socio-economic context and thus regarded as public health concerns in Europe, our results suggest that this applies to well-being at work and related support factors as well

Chamot S, Delzard M, Leroy L, Marhic G, and Ganry O. Occupational exposures in the rubber tire industry and risk of cancer: a systematic review. *International Archives of Occupational & Environmental Health*. 2023; 96(6):797-814.

<https://doi.org/10.1007/s00420-023-01972-x>

Abstract: **OBJECTIVE:** This study aimed at investigate the association between cancer and the rubber tire industry using indicators used to estimate exposure, such as duration or historical time period of exposure. **METHODS:** A systematic review using MEDLINE was carried out. The Preferred Reporting Items for Systematic Reviews (PRISMA) statement guided the systematic review. The Risk of Bias in Non-Randomized Studies of Exposures (ROBINS-E) was used to analyze biases in the selected studies. **RESULTS:** A total of 240 articles were initially selected. Of these, 17 were included in this systematic review of 15 different cohorts and one case-control study. Five cohorts were composed of rubber industry employees including some

who worked in the rubber tire industry, whereas the other 10 cohorts were composed exclusively of rubber tire industry employees. An increased risk of lung/respiratory cancer is possible in the oldest time periods without duration of exposure showing any association according to the analysis. The work areas of mixing and milling as well as compounding seem to be more specifically associated with this risk, which could be expected because of the exposure to fumes containing carcinogenic agents. CONCLUSIONS: Having worked in the rubber tire industry in the past, especially in milling, mixing as well as compounding may be associated with an increased risk of lung/respiratory cancer

Framke E, Alexanderson K, Sorensen JK, Pedersen J, Madsen IEH, Rugulies R, et al. Emotional demands and all-cause and diagnosis-specific long-term sickness absence: a prospective cohort study in Sweden. *European Journal of Public Health*. 2023; 33(3):435-441.

<https://doi.org/10.1093/eurpub/ckad072> [open access]

Abstract: Background: High emotional demands at work require sustained emotional effort and are associated with adverse health outcomes. We tested whether individuals in occupations with high emotional demands, compared with low demands, had a higher future risk of all-cause long-term sickness absence (LTSA). We further explored whether the risk of LTSA associated with high emotional demands differed by LTSA diagnoses. Methods: We conducted a prospective, nationwide cohort study on the association between emotional demands and LTSA (>30 days) in the workforce in Sweden (n = 3 905 685) during a 7-year follow-up. Using Cox regression, we analyzed sex-stratified risks of all-cause and diagnosis-specific LTSA due to common mental disorders (CMD), musculoskeletal disorders (MSD) and all other diagnoses. Multivariable adjusted models included age, birth country, education, living area, family situation and physical work demands. Results: Working in emotionally demanding occupations was associated with a higher risk of all-cause LTSA in women [hazard ratio (HR) = 1.92, 95% confidence interval (CI): 1.88-1.96] and men (HR = 1.23, 95% CI: 1.21-1.25). In women, the higher risk was similar for LTSA due to CMD, MSD and all other diagnoses (HR of 1.82, 1.92 and 1.93, respectively). In men, risk of LTSA due to CMD was pronounced (HR = 2.01, 95% CI: 1.92-2.11), whereas risk of LTSA due to MSD and all other diagnoses was only slightly elevated (HR of 1.13, both outcomes). Conclusions: Workers in occupations with high emotional demands had a higher risk of all-cause LTSA. In women, risk of all-cause and diagnosis-specific LTSA were similar. In men, the risk was more pronounced for LTSA due to CMD.

Holmlund L, Sandman L, Hellman T, Kwak L, and Bjork Bramberg E. Ethical aspects of the coordination of return-to-work among employees on sick leave due to common mental disorders: a qualitative study. *Disability and Rehabilitation*. 2023; 45(13):2118-2127.

<https://doi.org/10.1080/09638288.2022.2084779>

Abstract: Purpose: Identify ethical issues that arise in the coordination of return-to-work (RTW) among employees on sick leave due to common mental disorders (CMDs). Material

and methods: 41 semi-structured individual interviews and one focus group interview with stakeholders (n = 46) involved in RTW: employees on sick leave due to CMDs, coordinators and physicians at primary health care centres, managers, representatives of the Swedish social insurance agency and occupational health services. A six-step thematic analysis focused on the ethical values and norms related to autonomy, privacy, resources and organization, and professional values. Results: Five themes were identified: (1) autonomous decision-making versus the risk of taking over, (2) employee rights versus restrictions to self-determination, (3) respect for employee privacy versus stakeholders' interests, (4) risk of unequal inclusion due to insufficient organizational structure and resources, (5) risk of unequal support due to unclear professional roles and responsibilities. Conclusion: The main ethical issues are the risks of unequal access to and unequal support for the coordination of RTW. For the fair and equal provision of coordination, it is necessary to be transparent on how to prioritize the coordination of RTW for different patient groups, provide clarity about the coordinator's professional role, and facilitate ongoing boundary work between stakeholders. IMPLICATIONS FOR REHABILITATION Un fair and arbitrary criteria for inclusion to the coordination of RTW implicate risks of unequal access for the employee on sick leave due to CMDs. Unclear professional roles and responsibilities among stakeholders in the coordination of RTW implicate risks of unequal support for the employee on sick leave due to CMDs. Coordination of RTW should be transparently prioritized on policy and organisational levels to secure fair and equal inclusion. The coordinator's professional role should be clearly defined to facilitate boundary work between stakeholders and improve the competence around the coordination of RTW.

Kaltenegger HC, Becker L, Rohleder N, Nowak D, Quartucci C, and Weigl M. Associations of technostressors at work with burnout symptoms and chronic low-grade inflammation: a cross-sectional analysis in hospital employees. *International Archives of Occupational & Environmental Health*. 2023; 96(6):839-856.

<https://doi.org/10.1007/s00420-023-01967-8> [open access]

Abstract: Objective: Despite the increasing scholarly interest in the phenomenon technostress, associated biological effects on employee health are under-researched. Chronic low-grade inflammation is suggested as a central pathway linking stress experience to disease development. The aim of this study was to assess associations of technology-related work stressors (technostressors) with low-grade inflammation and burnout symptoms. Methods: N = 173 (74.6% women, Mage = 31.0 years) university hospital employees participated in a cross-sectional study. Self-report questionnaires were used for the assessment of general psychosocial working conditions (work overload, job control, social climate), a range of different technostressors, burnout symptoms, and relevant confounders. Participants provided capillary blood samples, and high-sensitivity C-reactive protein (hs-CRP) as an inflammatory biomarker was analyzed from dried blood spots. Results: Based on a factor analysis, we identified four underlying dimensions of technostressors: techno- and information overload, techno-complexity, interruptions and multitasking as well as usability

and technical support. In multivariate linear regressions, techno-/information overload and techno-complexity were associated with core (exhaustion, mental distance) and secondary (psychosomatic complaints) symptoms of burnout. Techno-/information overload was a significant predictor of burnout core symptoms, even when general work overload was controlled for. The technostressors were not associated with hs-CRP. Conclusion: This is the first study on technology-related stress at work and chronic low-grade inflammation. The results suggest that (information) overload caused by digital technology use is a distinct work stressor with genuine consequences for psychological health. To what extent these effects also manifest on a physiological level needs to be subjected to future studies, ideally with prospective designs.

Kolus A, Wells RP, and Neumann WP. Examining the relationship between human factors related quality risk factors and work related musculoskeletal disorder risk factors in manufacturing. *Ergonomics*. 2023; 66(7):954-975.

<https://doi.org/10.1080/00140139.2022.2119285>

Abstract: This study addresses the relationship between human factors (HF) related quality deficits in manufacturing and work-related musculoskeletal disorder (WMSD) risk factors in production staff. A recent systematic review identified 60 HF-related quality risk factors (QRFs) in manufacturing related to product, process and workstation design stages. We investigate the extent to which these identified QRFs are also WMSD risk factors. Each QRF was examined for its relationship with WMSD using a 0 (no relationship) to 10 (strong relationship) scale rubric. The authors rated each QRF separately and then discussed and adjusted their ratings in a review session. Results showed that average median ratings were the highest for QRFs related to product design (8/10), intermediate for QRFs related to workstation design (7/10) and the lowest for QRFs related to process design (5/10). This emphasises the significant role of HF in system design in reducing both quality deficits and risk of developing WMSDs for manufacturing personnel. Practitioner summary: This study investigates whether human-related risk factors for product quality are also risk factors for work-related musculoskeletal disorders in manufacturing. Results showed a substantial relationship between quality risk factors and WMSD risk factors. This indicates the significant role of human factors in operations design in improving both system performance and human wellbeing

Krick A, Felfe J, and Klebe L. Can mindfulness buffer against negative effects of job demands for military and police personnel? *Journal of Occupational & Environmental Medicine*. 2023; 65(5):428-436.

<https://doi.org/10.1097/JOM.0000000000002805>

Abstract: OBJECTIVE: We examined buffering effects of mindfulness on the relationship between job demands and health (ie, strain, complaints, affect, general health) in high-risk professions with high levels of unavoidable stressors. METHODS: We analyzed cross-sectional and longitudinal data from military (n = 362) and police personnel (n = 359). RESULTS: Study

1 showed that mindfulness buffered the effect of job demands at time 1 on strain and negative affect at time 2. Study 2 showed that mindfulness mitigates the relationship between job demands and strain and health complaints. With higher mindfulness, negative effects of job demands were reduced. Additional analyses reveal which facets of mindfulness are mostly important. CONCLUSIONS: Findings provide evidence for the buffering effects of mindfulness and showed that mindfulness buffers against job demands in work contexts with high levels of stress and risk and a male-oriented culture

Ochiai Y, Takahashi M, Matsuo T, Sasaki T, Sato Y, Fukasawa K, et al. Characteristics of long working hours and subsequent psychological and physical responses: JNIOOSH cohort study. Occupational & Environmental Medicine. 2023; 80(6):304-311.

<https://doi.org/10.1136/oemed-2022-108672> [open access]

Abstract: Objectives: This study aimed to examine the prospective association among objectively measured average working hours (AWHs), frequency of long working hours (FLWHs; defined as ≥ 205 working hours/month ($=45$ hours/week)) for 6 months, and workers' self-reported psychological and physical health. Methods: The study included 15 143 workers from 5 Japanese companies. We collected monthly attendance records over 6 months before distributing a questionnaire survey on psychological/physical stress responses and work-related demographics. We then evaluated the associations of those attendance records with psychological/physical measures using analysis of covariance adjusted for sex, age, employment, job type, working conditions, work site and experience of emergency state due to COVID-19. Results: Irritability, anxiety and depression were significantly greater at ≥ 180 hours ($=45$ hours/week), and fatigue and lack of vigour were greater at ≥ 205 hours than those of the normal working-hour group (140-180 hours/month [35-45 hours/week]). Psychological indices increased significantly with FLWH, with ≥ 3 times for irritability, depression and fatigue; ≥ 2 times for lack of vigour; and ≥ 1 time for anxiety when compared with no long working hours. No significant associations were observed between AWH or FLWH and physical stress responses. Conclusions: Longer AWH was associated with higher levels of psychological stress responses. The effects of FLWH in the past 6 months varied among the psychological stress responses and did not occur for physical complaints. Under circumstances requiring long hours, workers' mental health should be protected through minimising the frequency of long work hours.

Quinn EL, Otten JJ, Stover B, Peckham T, and Seixas NS. Work-related factors associated with health and well-being of early care and education workers. Journal of Occupational & Environmental Medicine. 2023; 65(6):e384-e394.

<https://doi.org/10.1097/JOM.0000000000002832>

Abstract: OBJECTIVE: We assessed and examined relationships between the health and working conditions of early care and education workers. METHODS: We surveyed early care and education workers (n = 2242) about their socioeconomic characteristics; work organization; psychosocial, physical, and ergonomic exposures; coping behaviors; and health.

RESULTS: Nearly half of respondents reported chronic health conditions. Most worked full time, half earned less than \$30,000 a year, and many reported unpaid hours or inability to take breaks. One-quarter reported economic strain. Numerous exposures were prevalent. Workers' general health was poorer than normed averages, although their physical functioning was slightly better. Sixteen percent of workers reported work-related injuries, and 43% reported depressive symptoms. Factors associated with health included socioeconomic characteristics, having a chronic condition, job type, access to benefits, eight psychosocial stressors, four physical exposures, sleep, and alcohol consumption.

CONCLUSIONS: Findings support the need for attention to this workforce's health

Renaud C and Lacroix A. Systematic review of occupational burnout in relation to cognitive functions: current issues and treatments. *International Journal of Stress Management*. 2023; 30(2):109-127.

<https://doi.org/10.1037/str0000279;10.1037/str0000279>

Roodbol J and Stynen D. More or less job performance in an insecure job? A study on the relationship between job insecurity and in-role and extra-role performance. *Journal of Occupational & Environmental Medicine*. 2023; 65(6):510-520.

<https://doi.org/10.1097/JOM.0000000000002828>

Abstract: **OBJECTIVE:** To gain insight into the complex relationship between job insecurity and in-role and extra-role performance. Autonomous work motivation is investigated as a mediator in this relationship. The quality of the employee-supervisor relationship (LMX) is investigated as a moderator between job insecurity and autonomous work motivation. **METHODS:** Cross-sectional data were collected by online surveys among 206 Dutch and Belgian employees. Multiple regression analyses were performed to test the hypotheses. **RESULTS:** Job insecurity was negatively associated with both in-role and extra-role performance. Autonomous work motivation mediated the negative relationship between job insecurity and in-role and extra-role performance. LMX did not moderate the negative relationship between job insecurity and autonomous work motivation. **CONCLUSIONS:** Organizations need to prevent job insecurity and limit the negative consequences of job insecurity for sustaining employees' autonomous work motivation and job performance

Stahl C, De Wispelaere J, and MacEachen E. The work disability trap: manifestations, causes and consequences of a policy paradox. *Disability and Rehabilitation*. 2023; 45(11):1916-1922.

<https://doi.org/10.1080/09638288.2022.2074554> [open access]

Abstract: **PURPOSE:** This article focuses on the risk that work disability policies lock people into work disability rather than promote durable health and return to work. We outline the concept of a work disability trap as a heuristic device to explore this policy paradox inherent in the design of most social insurance systems. **MATERIALS AND METHODS:** This is a conceptual paper drawing on examples from existing research. **RESULTS:** We identify three

manifestations of the disability trap: not overcoming disability; underperforming; and returning to work prematurely. The causes of these manifestations are identified as structural rather than based on malingering clients, while negative consequences are identified both on client and system levels. CONCLUSION: We emphasize the need for systems built on trust and reasonable expectations, and the need for providing rehabilitation support independently of economic compensation. Universal basic income is introduced as a potential tool to ameliorate some of the consequences of the disability trap. Implications for rehabilitation Compensation systems focusing too prominently on early return to work may have counter-productive effects on rehabilitation. Overly suspicious assessment systems nurture a view of people as malingerers. Rehabilitation professionals need to be attentive to system-generated effects which may prevent overcoming work disability

Sutton C, Prowse J, McVey L, Elshehaly M, Neagu D, Montague J, et al. Strategic workforce planning in health and social care: an international perspective: a scoping review. Health Policy. 2023; 132:104827.

<https://doi.org/10.1016/j.healthpol.2023.104827> [open access]

Abstract: Effective strategic workforce planning for integrated and co-ordinated health and social care is essential if future services are to be resourced such that skill mix, clinical practice and productivity meet population health and social care needs in timely, safe and accessible ways globally. This review presents international literature to illustrate how strategic workforce planning in health and social care has been undertaken around the world with examples of planning frameworks, models and modelling approaches. The databases Business Source Premier, CINAHL, Embase, Health Management Information Consortium, Medline and Scopus were searched for full texts, from 2005 to 2022, detailing empirical research, models or methodologies to explain how strategic workforce planning (with at least a one-year horizon) in health and/or social care has been undertaken, yielding ultimately 101 included references. The supply/demand of a differentiated medical workforce was discussed in 25 references. Nursing and midwifery were characterised as undifferentiated labour, requiring urgent growth to meet demand. Unregistered workers were poorly represented as was the social care workforce. One reference considered planning for health and social care workers. Workforce modelling was illustrated in 66 references with predilection for quantifiable projections. Increasingly needs-based approaches were called for to better consider demography and epidemiological impacts. This review's findings advocate for whole-system needs-based approaches that consider the ecology of a co-produced health and social care workforce

Wan W, Ge CB, Friesen MC, Locke SJ, Russ DE, Burstyn I, et al. Automated coding of job descriptions from a general population study: overview of existing tools, their application and comparison. *Annals of Work Exposures and Health*. 2023; 67(5):663-672.

<https://doi.org/10.1093/annweh/wxad002> [open access]

Abstract: OBJECTIVES: Automatic job coding tools were developed to reduce the laborious task of manually assigning job codes based on free-text job descriptions in census and survey data sources, including large occupational health studies. The objective of this study is to provide a case study of comparative performance of job coding and JEM (Job-Exposure Matrix)-assigned exposures agreement using existing coding tools. METHODS: We compared three automatic job coding tools [AUTONOC, CASCOT (Computer-Assisted Structured Coding Tool), and LabourR], which were selected based on availability, coding of English free-text into coding systems closely related to the 1988 version of the International Standard Classification of Occupations (ISCO-88), and capability to perform batch coding. We used manually coded job histories from the AsiaLymph case-control study that were translated into English prior to auto-coding to assess their performance. We applied two general population JEMs to assess agreement at exposure level. Percent agreement and PABAK (Prevalence-Adjusted Bias-Adjusted Kappa) were used to compare the agreement of results from manual coders and automatic coding tools. RESULTS: The coding per cent agreement among the three tools ranged from 17.7 to 26.0% for exact matches at the most detailed 4-digit ISCO-88 level. The agreement was better at a more general level of job coding (e.g. 43.8-58.1% in 1-digit ISCO-88), and in exposure assignments (median values of PABAK coefficient ranging 0.69-0.78 across 12 JEM-assigned exposures). Based on our testing data, CASCOT was found to outperform others in terms of better agreement in both job coding (26% 4-digit agreement) and exposure assignment (median kappa 0.61). CONCLUSIONS: In this study, we observed that agreement on job coding was generally low for the three tools but noted a higher degree of agreement in assigned exposures. The results indicate the need for study-specific evaluations prior to their automatic use in general population studies, as well as improvements in the evaluated automatic coding tools

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