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

Arnold TJ, Morrison SD, Romero MYM, Echeverria SE, Zapata S, Quandt SA, et al. Essential (ly forgotten) workers: Latine youth farmworkers during the COVID-19 pandemic. *American Journal of Industrial Medicine*. 2024; 67(12):1121-1134.

<https://doi.org/10.1002/ajim.23671>

Abstract: Background: Essential workers across multiple industries faced a disproportionate burden of morbidity and mortality during the COVID-19 pandemic. The effects were especially severe for agricultural and food processing workers, many of whom are members of the structurally vulnerable Latine community. Under current U.S. federal laws, children under 12 years old can legally work in agriculture, one of the most hazardous U.S. industries. Many of these working youth are Latine and experience health and educational inequities. Methods: Using a community-based participatory research approach and a qualitative design, we conducted semi-structured in-depth interviews in North Carolina in 2022, with service providers in health, education, and advocacy fields (n = 10) and Latine youth farmworkers aged 10-17 (n = 24). We used participatory qualitative analysis methods and a reflexive thematic analysis to understand and describe the work experiences of these youth during the first 2 years of the pandemic. Results: Amidst precarious economic and school situations exacerbated by the COVID-19 pandemic, many youths described an increased need to work to support their families. While aware and sometimes fearful of the added occupational health risks of COVID-19, youth and their families felt they had few other options. Service providers and youth described minimal employer-provided safety protocols or equipment, yet some workers organized their own attempts at safety protocols. Youth narratives imply limited knowledge of basic workplace safety requirements. Conclusions: Study findings emphasize the urgent need to address structural vulnerabilities shaping workplace policies and norms to protect Latine youth farmworkers to support their healthy development.

Bonney T, Rospenda KM, Chaudhry A, Forst L, Conroy LM, Holloway A, et al. The nature of employment in a high socioeconomic hardship community: data from the Greater Lawndale healthy work survey. *Journal of Occupational & Environmental Medicine*. 2024; 66(11):880-890.

<https://doi.org/10.1097/JOM.0000000000003200>

Abstract: OBJECTIVES: This cross-sectional survey aimed to examine employment characteristics and their associations with employment precarity in two high socioeconomic hardship Chicago neighborhoods. METHODS: We used a community-based participatory approach to develop and administer a survey to residents who perceived their work situations to be precarious. RESULTS: A total of 489 residents were surveyed. Responses were skewed toward the most precarious work situations, with the majority of respondents employed outside of a traditional arrangement. Those in the highest precarity category were most likely to identify as Latinx and born outside of the United States. Unstable, low-quality employment conditions were nearly all significantly associated with highest precarity work situations. CONCLUSIONS: Precarious employment is an important predictor of other employment conditions, and characterizing these at a hyperlocal level allows for a nuanced understanding of work as a determinant of health

Botlero R, Sethi P, Gasevic D, Owen N, Barr E, and Dunstan DW. A physical activity and sitting time balance index and all-cause mortality risk. *American Journal of Preventive Medicine*. 2024; 67(6):832-840.

<https://doi.org/10.1016/j.amepre.2024.07.015> [open access]

Abstract: INTRODUCTION: Achieving a healthier balance of more time spent in physical activity (PA) and less time in sedentary behavior is now widely advocated for achieving multiple health benefits. This study introduces a Physical Activity and Sitting Time Balance Index (PASTBI), a potential risk identification tool addressing the interplay between PA and sedentary behavior; and aims to explore its association with the risk of all-cause mortality in Australian adults. METHODS: This prospective cohort study analyzed the Australian Diabetes, Obesity and Lifestyle Study (AusDiab) data on 5,836 Australian adults. The PASTBI was calculated by dividing the total duration of PA (minutes/day) by the duration of sitting time (ST) (hours/day), both self-reported at baseline (2004-2005). The PASTBI was expressed in quartiles ranging from Q1 - low PA/high ST to Q4 - high PA/low ST. The association between PASTBI and all-cause mortality was explored (in 2022) using the Cox proportional hazards regression models adjusted for socio-demographics, lifestyle factors, waist circumference, and the number of comorbidities. RESULTS: During 78,406 person-years of follow-up (median follow-up of 14.3 years), there were 885 deaths (15%). In the fully adjusted model, compared to those in the highest PASTBI category (Quartile 4 - high PA/low ST), participants from the lowest PASTBI category (Quartile 1 - low PA/high ST) were at a higher risk of all-cause mortality [HR (95% CI) = 1.47 (1.21-1.79)]. CONCLUSIONS: A less favorable balance of time spent in PA and ST (as characterized by a parsimonious PASTBI index approach) was associated with a higher risk of all-cause mortality

Crizol GR, Sa KMM, Santos GM, Goncalves MLL, Mendes GD, Bussadori SK, et al. Work-related musculoskeletal disorders in dockworkers. *Systematic review and meta-analysis*. *Work*. 2024; 79(2):585-600.

<https://doi.org/10.3233/WOR-230666>

Abstract: BACKGROUND: Dockworkers are exposed to physical overloads that can contribute to the development of musculoskeletal disorders, leading to functional disability and absenteeism.

OBJECTIVE: to map, critically appraise, and synthesize the available evidence on the prevalence of musculoskeletal diseases associated with port occupational activities. **METHODS:** A comprehensive search was conducted in structured and unstructured databases in August 2023, with no date or language restriction, to identify observational studies evaluating the prevalence of musculoskeletal disorders in dockworkers' occupational activity. The risk of bias was assessed using validated tools based on the included study designs. Data from studies were pooled in meta-analyses. The certainty of the evidence was assessed using the GRADE approach. **RESULTS:** We identified 12 analytical cross-sectional studies involving 7821 participants in ports of five countries. Most studies (75%) had a moderate methodological quality according to the Joanna Briggs Institute tool. Considering the overall worker categories and any musculoskeletal disorders, the meta-analysis showed a prevalence of 58% (95% Confidence Interval [95% CI] 37% to 78%), with degenerative spinal diseases 42% (95% CI -0.6% to 91%) and low back pain 36% (95% CI 21% to 50%) being the most prevalent conditions. Symptoms were predominantly in foremen and stevedores. The certainty of the evidence was very low. **CONCLUSIONS:** Musculoskeletal disorders seem prevalent among dockworkers, mainly degenerative spinal diseases and low back pain. Studies with greater methodological consistency are still needed to validate these hypotheses and assist in decision-making for implementing preventive and informational policies in maritime port management organizations. PROSPERO registry CRD42021257677

Ferdous S. 'Divergent work ageing' and older migrants' (un)extended working lives. *Work, Employment and Society*. 2024; 38(6):1636-1657.

<https://doi.org/10.1177/09500170231218201> [open access]

Abstract: This article theorises older ethnic minority women's work attitudes and labour market behaviour from an intersectional cumulative perspective within the extended working lives contexts. Empirical evidence has been drawn from interviews with South Asian British Muslim women aged between 50 and 66 living in Greater Manchester, UK. The findings show that the cohort's ageing process is asynchronous with the British work ageing outlook as their cultural understanding of working age, age roles and successful ageing defies the extended working lives philosophies, and cumulative factors including caring responsibilities, legacy inequalities, and health issues present additional challenges for extending their work lives. Their culture- and context-specific work ageing process remains absent in the UK's labour market discourse and policy landscape. The article theorises their idiosyncratic work ageing including non-conformist attitudes to extending work lives by proposing a 'divergent work ageing' model that can guide policymakers in creating inclusive labour market policies.

Hopwood P, MacEachen E, Crouch M, Neiterman E, McKnight E, and Malachowski C. Return-to-work coordinators' perceptions of their roles relative to workers: a discourse analysis. *Journal of Occupational Rehabilitation*. 2024; 34(4):783-792.

<https://doi.org/10.1007/s10926-023-10167-7>

Abstract: **PURPOSE:** This paper describes how Canadian Return to Work coordinators (RTWC) framed their job roles relative to workers in ways that went beyond the usual professional norms of helping worker recovery. **METHODS:** In-depth interviews were conducted with 47 RTWCs across Canada in 2018-2019. We used critical discourse analysis to analyze the way coordinators viewed workers in the complex, multi-stakeholder system of RTW. **RESULTS:** We identified four ways that RTWCs positioned

themselves relative to workers: as trust builders, experts, detectives and motivators. These roles reflected RTWCs position within the system; however, their discourse also contributed to the construction of a moral hierarchy that valued worker motivation and framed some workers as attempting to exploit the RTW system. CONCLUSIONS: RTWCs' positions of power in the coordination process warrant further investigation of how they exercise judgement and discretion, particularly when the process depends on their ability to weigh evidence and manage cases in what might be seen as an objective and fair manner

Hunter KE, Aberoumand M, Libesman S, Sotiropoulos JX, Williams JG, Li W, et al. Development of the individual participant data integrity tool for assessing the integrity of randomised trials using individual participant data. *Research Synthesis Methods*. 2024; 15(6):940-949.

<https://doi.org/10.1002/jrsm.1739>

Abstract: Increasing integrity concerns in medical research have prompted the development of tools to detect untrustworthy studies. Existing tools primarily assess published aggregate data (AD), though scrutiny of individual participant data (IPD) is often required to detect trustworthiness issues. Thus, we developed the IPD Integrity Tool for detecting integrity issues in randomised trials with IPD available. This manuscript describes the development of this tool. We conducted a literature review to collate and map existing integrity items. These were discussed with an expert advisory group; agreed items were included in a standardised tool and automated where possible. We piloted this tool in two IPD meta-analyses (including 116 trials) and conducted preliminary validation checks on 13 datasets with and without known integrity issues. We identified 120 integrity items: 54 could be conducted using AD, 48 required IPD, and 18 were possible with AD, but more comprehensive with IPD. An initial reduced tool was developed through consensus involving 13 advisors, featuring 11 AD items across four domains, and 12 IPD items across eight domains. The tool was iteratively refined throughout piloting and validation. All studies with known integrity issues were accurately identified during validation. The final tool includes seven AD domains with 13 items and eight IPD domains with 18 items. The quality of evidence informing healthcare relies on trustworthy data. We describe the development of a tool to enable researchers, editors, and others to detect integrity issues using IPD. Detailed instructions for its application are published as a complementary manuscript in this issue.

Javanmardi S, Rappelt L, Heinke L, Niederer D, Zemke JA, Freiwald J, et al. Impact of work pace on cardiorespiratory outcomes, perceived effort and carried load in industrial workers: a randomised cross-over trial. *Occupational and Environmental Medicine*. 2024; 81(9):456-461.

<https://doi.org/10.1136/oemed-2024-109563> [open access]

Abstract: Objectives: This study investigates the impact of different work paces on cardiorespiratory outcomes, perceived effort and carried load (CL) in industrial workers. Methods: A randomised cross-over trial was conducted at a mid-sized steel company. We included 12 healthy industrial workers (8 females, age: mean 44±SD 9 years, height: 1.70±0.08 m, body mass: 79.5±13.4 kg) with at least 6 months of working experience. All participants performed 5 min of piece work at 100% (P100), 115% (P115) and 130% (P130) of the company's internal target yielded in a randomised order, separated by 5 min familiarisation breaks. The primary outcome was energy expenditure (EE), calculated from a respiratory gas exchange using a metabolic analyser. Secondary outcomes were total ventilation, oxygen uptake, carbon dioxide release, respiratory exchange ratio, heart rate and rating of perceived effort (0-10). Furthermore, the metabolic equivalent and the CL were calculated. Data were analysed

with repeated measure analyses of variance. Results: For EE, a large 'pace' effect with a small difference between P100 and P130 (165.9 ± 33.4 vs 178.8 ± 40.1 kcal/hour-1, $p=0.008$, standard mean difference, $SMD=0.35$) was revealed. Additionally, a large difference in CL between all paces ($p<0.001$, $SMD=1.10$) was revealed. No adverse events occurred. Conclusions: Cardiorespiratory outcomes rise with increased work pace, but the practical relevance of these differences still needs to be specified. However, the CL will add up over time and may impact musculoskeletal health in the long term.

Karanikas N and Zerguine H. Redefining health, risk, and safety for occupational settings: a mixed-methods study. Safety Science. 2025; 181:106698.

<https://doi.org/10.1016/j.ssci.2024.106698> [open access]

Abstract: Clear and specific definitions are essential in Occupational Health and Safety (OHS) practice and research, guiding the development of methods, tools, and metrics for effective management. However, there remains a lack of consensus within the field when defining health, risk, and safety. This study addresses this gap by proposing comprehensive definitions of these constructs based on the combination of empirical data from workshops conducted at a major construction company in Australia with literature from various disciplines. The qualitative analysis of participant responses and thematic coding of definitions from various disciplines revealed diverse perspectives on health, risk, and safety, highlighting the need for context-specific definitions tailored to different organisational levels. Hence, this study recommends simplified, summarised, and comprehensive definitions of these constructs to enhance clarity and consistency in OHS communication and practice. These definitions aim to foster a shared understanding and improve the effectiveness of OHS initiatives across different contexts. The paper also discusses several theoretical, practical, and ethical implications these definitions may have for researchers, practitioners, and policymakers regarding the scope of health, risk, and safety, their relationships, and the validity of related constructs such as risk assessment and safety performance. Finally, our study advocates a shift from mainly approaching OHS as a business objective towards viewing it more as a positive duty and public health area.

Langdon RR, Bradley L, Newton CJ, and Sawang S. The potential for workplaces to provide social support for distressed infrastructure workers. Journal of Construction Engineering and Management. 2024; 150(12):04024171.

<https://doi.org/10.1061/JCEMD4.COENG-14690>

Madsen AM, Rasmussen PU, Delsuz MS, and Frederiksen MW. A cross-sectional study on occupational hygiene in biowaste plants. Annals of Work Exposures and Health. 2024; 68(9):967-981.

<https://doi.org/10.1093/annweh/wxae074> [open access]

Abstract: Recycling demands are increasing and new biowaste plants are established. The aim of this study is to obtain knowledge about occupational hygiene in biowaste pretreatment plants. At 6 plants, bioaerosol exposure, hand hygiene, and bioaerosol concentrations in work areas were investigated repeatedly. The total inflammatory potential (TIP) of exposures was measured using the human HL-60 cell line. Exposure to airborne bacteria, bacteria able to grow anaerobic, fungi (37°C), endotoxin, and TIP differed between plants and was lowest in a plant transporting waste in closed pipes compared to plants where waste was delivered on the receiving hall floor. Conversely, high exposures were measured in a plant that also processes compost. All microbial components had an impact on TIP of workers' exposure with main effects of fungi and endotoxin. Seasonality was found

for several exposures and TIP, and they were lowest in the winter. Concentrations of bacteria and fungi on workers' hands at the end of the workday were 15 times higher for production than for nonproduction workers. In work areas, the concentrations of airborne fungi were highest in the waste-receiving area. Bacteria (3.2 μm) and anaerobic bacteria (4.0 μm) were present as larger airborne particles than fungi (2.8 μm), and bacteria were largest in the waste-receiving area. The microbial community compositions of exposures and work areas differed between plants and work areas. In conclusion, measures to reduce exposure should focus on the waste-receiving area and on the production workers. Differences in exposures and community compositions were found between seasons, work areas, work groups, and plants.

Monroe J, Vincent S, and Lopes A. 'It's one rule for them and one for us': occupational classification, gender and worktime domestic labour. *Work, Employment and Society*. 2024; 38(5):1175-1196. <https://doi.org/10.1177/09500170241235864> [open access]

Abstract: In this article, we focus on gender and class to investigate worktime domestic labour. Methodologically, we extend a novel, comparative critical realist method in which occupation-based and gendered positions in productive and reproductive labour are foregrounded. By building theoretical connections between labour process conditions and collective rule-following practices, we illustrate how inequalities are inscribed organisationally. Our analysis provides a more critical contextualisation of technological affordances to develop the literature on how technology is implicated in the reproduction of social inequality. Moreover, our analysis identifies multi-level causal processes, which combine to explain the presence and actualisation of worktime domestic labour or its absence, which is due, principally, to fear of sanction. For realist researchers interested in diversity-based challenges, absences are important because they can point towards specific discriminatory mechanisms. Our investigation thus revealed a surprising level of class-related in-work inequality within the gendered dynamics of domestic work.

Park S and Lee JH. Higher anxiety level and associated work-related factors of delivery workers in South Korea: from the 6th Korean working conditions survey. *International Archives of Occupational & Environmental Health*. 2024; 97(8):871-878. <https://doi.org/10.1007/s00420-024-02092-w>

Abstract: Objective: This study investigates anxiety risk and work-related factors among platform workers. The recent growth in the platform industry is a worldwide trend, with delivery workers in Korea representing typical platform workers. Methods: This cross-sectional study used the 6th Korean Working Conditions Survey to assess anxiety risk among 532 delivery workers compared to general employees. It identified associations between work-related factors and anxiety, including job demands and autonomy, legal protection, and emotional labor. Results: Delivery workers exhibited significantly higher anxiety (odds ratio [OR] = 1.67 95% confidence interval [CI] = 1.23-2.28) and work-related anxiety (OR = 2.17 95% CI = 1.48-3.18) risk than the general workforce, and a significantly higher risk of having unfavorable work environment factors. Their anxiety risk was significantly associated with work-related factors, such as long shifts, quick return, time pressure, job stress, absence of union, work-family conflict, and emotional labor. Conclusions: This study identified high levels of anxiety among Korean delivery workers and associated occupational factors. It highlights the importance for industry and government interventions to enhance mental health support, mitigate poor employment conditions, and ensure legal safeguards.

Sri Lekha PP, Abdul Azeez EP, Singh A, and Irshad CV. Association of nature of work and work-related characteristics with cognitive functioning, life satisfaction and depression among Indian ageing adults. International Archives of Occupational & Environmental Health. 2024; 97(8):833-846. <https://doi.org/10.1007/s00420-024-02089-5>

Abstract: Background: Most individuals spend a significant amount of their time at work, and the dynamics at work can potentially influence their overall life, especially health and mental health. The present study tried to understand the association of the nature of work categorized as physically demanding, psychologically demanding, and environmentally hazardous on life satisfaction, cognitive functioning, and depressive symptoms among working middle-aged and older adults in India. Method: We used data from the Longitudinal Ageing Study in India (LASI), Wave 1, collected between 2017 and 2018. The study sample consists of 28,653 working adults aged between 45 and 70. The study measures were assessed using standard tools. Linear regression analysis was employed. Results: The results indicate that individuals working in less physically demanding ($\beta = 0.06$, 99% CI = 0.02-0.09) and not hazardous environments ($\beta = 0.15$, 99% CI = 0.09-0.20) had better life satisfaction. Also, not being involved in hazardous work environments increased the likelihood of good cognitive functioning and reduced depressive symptoms ($\beta = -0.17$, 99% CI = -0.20- -0.15). However, samples involved in works requiring less psychological demand had an increased likelihood of reduced life satisfaction and increased depressive symptoms. Conclusion: This study's results highlight the importance of creating a conducive working environment for the ageing adults.

Thorsen EHK, Dalboge A, Hovgaard N, Andersen JH, and Jahn A. Occupational mechanical exposures as risk factor for shoulder osteoarthritis: a systematic review. Annals of Work Exposures and Health. 2024; 68(9):895-905.

<https://doi.org/10.1093/annweh/wxae063>

Abstract: OBJECTIVES: The aim of this systematic review was to study the association between occupational mechanical exposures and shoulder osteoarthritis (OA). METHODS: A protocol was registered in PROSPERO. Four databases were systematically searched based on PECOS criteria. Outcome was defined as shoulder OA (acromioclavicular (AC) and/or glenohumeral OA) and exposure as occupational mechanical exposures (vibration, upper arm elevation, force, lifting, repetition, and combined mechanical exposures). We included epidemiological studies estimating the prevalence of shoulder OA or the association between occupational mechanical exposures and shoulder OA. Two researchers independently screened articles, performed data extraction, and assessed the risk of bias and level of evidence using GRADE. RESULTS: A total of 1642 articles were screened, of which 7 met the inclusion criteria. Four studies were assessed as having a high risk of bias, 1 with a moderate risk, and 2 with a low risk. Based on job titles, higher prevalence estimates (2.9% to 61.8%) were found in exposed job groups. For all occupational mechanical exposures, exposure-response relations were found in relation to AC OA. For vibration, the odds ratio (OR) ranged between 1.7 and 3.1 in the highest exposure groups, while the ORs for upper arm-elevation, force, lifting, repetition, and combined mechanical exposures ranged between 0.5 to 2.2, 1.3 to 1.8, 7.3 to 10.3, 2.4, and 2.2 to 2.9. Low or very low level of evidence was found for all exposures. CONCLUSIONS: This systematic review found an indication of an association between occupational mechanical exposures and shoulder OA, especially AC OA. However, the level of evidence varied between low and very low. High-quality

studies assessing the association and differentiating between the specific shoulder joints are highly warranted

Yang KH, Mueller L, El-Shahawy O, and Palamar JJ. Cannabis use, use disorder, and workplace absenteeism in the U.S., 2021-2022. American Journal of Preventive Medicine. 2024; 67(6):803-810. <https://doi.org/10.1016/j.amepre.2024.07.021>

Abstract: Introduction: Cannabis use and cannabis use disorder (CUD) are associated with adverse psychosocial outcomes, but their impact on workplace absenteeism remains poorly understood. Moreover, few studies have examined the role of CUD severity. This study aims to address these gaps by examining the associations between cannabis use recency, frequency, CUD severity, and workplace absenteeism. Methods: Cross-sectional data from a U.S. representative sample of full-time employed adults aged ≥ 18 from the 2021 to 2022 National Survey on Drug Use and Health (N=46,499) were analyzed. The associations between cannabis use recency, past-month cannabis use frequency, CUD severity, and workplace absenteeism (measured by self-reported number of missed days due to illness/injury and skipped work in the last 30 days) were evaluated using negative binomial regression, adjusting for sociodemographic characteristics and other substance use. Data were analyzed in 2023-2024. Results: An estimated 15.9% of full-time employed adults used cannabis in the past month, with 6.5% meeting CUD criteria. Past-month cannabis use (compared to no lifetime use), more frequent past-month cannabis use (compared to no use in the past month), and each level of CUD (compared to no CUD) were associated with increased incidence of both missing work due to illness/injury and skipping work, with a dose-response relationship observed between CUD severity and skipping work (mild: adjusted incident rate ratio [aIRR]=1.60 [95% confidence interval [CI]=1.24, 2.08]; moderate: aIRR=1.98 [95% CI=1.50, 2.61]); severe (aIRR=2.87 [95% CI=2.12, 3.88]). Conclusions: Individuals with recent and frequent cannabis use and CUD are disproportionately prone to workplace absenteeism. Results support the enforcement of workplace drug prevention and treatment policies.

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