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

***Irvin E, Tompa E, Johnston H, Padkapayeva K, Mahood Q, Samosh D, et al. Financial incentives to promote employment of persons with disabilities: a scoping review of when and how they work best. *Disability and Rehabilitation*. 2022; [epub ahead of print].**

<https://doi.org/10.1080/09638288.2022.2133178>

Abstract: PURPOSE: To assess the state of evidence on the use of financial incentives to employ, retain, and promote persons with disabilities. MATERIALS AND METHODS: We completed a scoping review of the peer-reviewed literature published from 1990 to 31 March 2022. Inclusion criteria were - populations with a disability; employment, retention, or promotion; and use of financial incentives targeted at employers. Articles were excluded if incentive was targeted solely at persons with disabilities. RESULTS: Seventeen articles met the inclusion criterion and were collated based on their study designs, type of incentive investigated, employment sector, and jurisdiction. We identified seven common themes that are relevant contextual and situational factors associated with the use of financial incentives to employ, retain, and promote persons with disabilities. CONCLUSIONS: While the literature identified the fact that financial incentives are widely used, the current state of the literature is modest and insufficient to make strong statements about the evidence on how and when financial incentives work well or do not work well. The themes identified allude to a subset of contextual factors requiring consideration for incentive use; however, evaluative research is still required to substantiate best practices for their use. Implications for rehabilitation Financial incentives for the recruitment, retention, and promotion of workers with disabilities take many different forms and can incite different behaviours based on their form and

context. Workers with disabilities are as diverse as workers without disabilities, consequently the supports required will differ from situation to situation. In some cases, a worker with a disability may require several types of supports, at a point in time, or over their employment journey. Employer knowledge and experience are important considerations in the use of financial incentives, as are employer skills in recruitment, retention, and promotion of workers with disabilities

***Pope J, Hall S, Bombardier C, Haraoui B, Jones G, Naik L, et al. Post-switch effectiveness of etanercept biosimilar versus continued etanercept in rheumatoid arthritis patients with stable disease: a prospective multinational observational study. *Advances in Therapy*. 2022; 39(11):5259-5273.**

<https://doi.org/10.1007/s12325-022-02303-1>

Abstract: Introduction: To better inform clinicians about the use of etanercept biosimilar (SB4) in patients with rheumatoid arthritis (RA), COMPANION-B, a prospective real-world observational study, evaluated the effectiveness of the voluntary switch from originator (etanercept, ETN) to SB4 in patients with stable RA (low-disease activity/remission). Methods: The study recruited adult patients (18 years or older) with RA (2010 American College of Rheumatology criteria) prescribed ETN as their first or second biologic for at least 6 months across 14 sites in Canada and five in Australia. Patients had stable disease (Disease Activity Score-28 using erythrocyte sedimentation rate [DAS28-ESR] less than 3.2) at enrollment with no evidence of flare within the previous 3 months. Concomitant disease-modifying antirheumatic drugs (DMARDs) were permitted. Patients could elect to continue ETN or voluntarily switch to SB4 in consultation with their doctors. The primary effectiveness measure was the proportion of patients with disease worsening (defined as a DAS28-ESR increase of at least 1.2 from baseline and minimum score of at least 3.2 or a defined modification in RA treatment) during 12 months of follow-up. The secondary effectiveness measure was the proportion of patients with disease worsening at month 6. Serious adverse events (SAEs) and non-serious adverse reactions (NSARs) were recorded. Results: Of 163 patients enrolled, 109 elected to continue on ETN and 54 switched to SB4; 65.8% of patients received non-biologic DMARD(s), 52.6% methotrexate, and 10.5% oral corticosteroid(s). At month 12, the proportion of patients with disease worsening was comparable in the ETN group (22.8% [95% CI 15.0-32.2]) and SB4 group (17.6% [95% CI 8.4-30.9]). Similarly, the proportions of patients with disease worsening were also comparable at month 6 (ETN: 7.9% [95% CI 3.5-15.0]; SB4: 7.8% [95% CI 2.2-18.9]). SAEs were low and similar across both groups (ETN: 8.7%; SB4: 5.7%). NSARs were slightly higher in the SB4 vs. ETN group (13.2% vs. 2.9%). Conclusions: SB4 demonstrated comparable effectiveness to ETN over 12 months in patients with stable RA who voluntarily switched to the biosimilar in a real-world setting.

Albanesi B, Piredda M, Bravi M, Bressi F, Gualandi R, Marchetti A, et al. Interventions to prevent and reduce work-related musculoskeletal injuries and pain among healthcare professionals. A comprehensive systematic review of the literature. Journal of Safety Research. 2022; 82:124-143.

<https://doi.org/10.1016/j.jsr.2022.05.004>

Abstract: Introduction: Work-related musculoskeletal disorders (WMSDs) are among the main causes of injury and pain in healthcare professionals. Previous reviews provided a fragmented view of the interventions available for WMSDs. This review aims to provide a comprehensive description of interventions for preventing and reducing work-related musculoskeletal injuries and/or pain among healthcare professionals, and to assess the methodological quality of studies. Methods: A systematic literature review was performed, based on the Effective Public Health Practice Project process. A comprehensive search was conducted on six peer-reviewed databases and manually. The methodological quality of the studies included was rated as weak, moderate, or strong. The studies were organized based on the 2019 classification of the interventions by Oakman and colleagues. Results: Twenty-seven articles were included reporting individual (n = 4), task-specific (n = 4), work organization and job design (n = 2), work environment (n = 1), and multifactorial (n = 16) interventions. Overall quality rating was strong for 6 studies, moderate for 16, and weak for 5. Individual interventions such as neuromuscular and physical exercise were effective in reducing pain. Task-specific and work organization interventions could prevent certain injuries. Significant reduction of both injuries and pain resulted from multifactorial interventions, which were reported by the majority of strong (n = 5) and moderate (n = 10) quality articles. Conclusions: This review provides healthcare professionals with evidence-based information to plan interventions targeted towards reducing WMSDs. In particular, more efforts are needed to implement and extend effective multifactorial interventions. Moreover, studies about each professional healthcare target group are needed. Practical application: Our results can guide policy-makers, healthcare managers and professionals to choose the best strategies to prevent and reduce WMSDs and to shape continuous education programs. This study prompts clinicians to develop inter-professional collaborations and to practice physical activities in order to reduce WMSDs.

Anttila A, Uuskulainen S, Rantanen M, and Sallmen M. Lung cancer incidence among workers biologically monitored for occupational exposure to lead: a cohort study. Scandinavian Journal of Work, Environment & Health. 2022; 48(7):540-548.

<https://doi.org/10.5271/sjweh.4046> [open access]

Abstract: Objective: Earlier studies have reported increased risks of lung, kidney and brain cancers for exposure to lead. The International Agency for Research on Cancer (IARC) Working Group evaluated inorganic lead and its compounds probably carcinogenic to humans. This study aimed to assess the association between blood lead level in occupational exposure and risk of lung cancer. Methods: The study was based on the follow-up of lung cancer incidence during 1973-2014 among 20 729 employees biologically monitored for their

occupational lead exposure in 1973-1983. Duration of employment in the monitored work was assessed using records from the Finnish Centre for Pensions; and potential confounding by other occupational carcinogens using longitudinal information on the occupation in censuses and the Finnish National Job-Exposure Matrix (FINJEM). Occupation- and gender-specific prevalence of regular tobacco smoking and the socioeconomic status were also utilized in the adjustments for potential confounding. Results: Positive trends were found for the elevated blood lead levels on the lung cancer risk. Among employees with the duration of employment of ≥ 60 months, the relative risk (RR) of lung cancer was 1.72 [95% confidence interval (CI) 1.28-2.31] for mean blood lead 1.0-1.9 $\mu\text{mol/L}$ and RR 2.63 (95% CI 1.71-4.05) for mean blood lead ≥ 2.0 $\mu\text{mol/L}$, compared with mean lead < 0.5 $\mu\text{mol/L}$. The studied potential confounders did not explain the findings on the increased risk for lead exposure. Conclusions: The current study lends support to the findings that exposure to lead increases lung cancer risk. Increased risks were seen already at rather low blood lead levels.

Boden LI, Asfaw A, Busey A, Tripodis Y, O'Leary PK, Applebaum KM, et al. Increased all-cause mortality following occupational injury: a comparison of two states. Occupational and Environmental Medicine. 2022; [epub ahead of print].

<https://doi.org/10.1136/oemed-2022-108481>

Abstract: OBJECTIVES: To measure the impact of lost-time occupational injuries on all-cause mortality in Washington State and, using the same data elements and study design, to determine whether the estimated impact was similar to previous estimates for New Mexico. METHODS: We linked injuries in the Washington workers' compensation system with Social Security Administration data on earnings and mortality. We estimated Cox survival models of mortality for women and men with lost-time compared with medical-only injuries, adjusting for age, pre-injury earnings and industry. We used quantitative bias analysis to account for confounding by pre-injury smoking and obesity. RESULTS: The estimated mortality HR was 1.24 for women (95% CI 1.21 to 1.28) and 1.22 for men (95% CI 1.20 to 1.24). After adjusting for unmeasured pre-injury smoking and obesity, the estimated HR for women was 1.10, 95% simulation interval (SI) 1.00 to 1.21; for men, it was 1.15, 95% SI 1.04 to 1.27. CONCLUSIONS: All-cause mortality for Washington workers with lost-time injuries was higher than for those with medical-only injuries. Estimated HRs for Washington were consistent with those previously estimated for New Mexico, a less populous state with lower median wages and a different workers' compensation insurance mechanism. This suggests that the relationship between workplace injury and long-term mortality may be generalisable to other US states. These findings support greater efforts to enhance safety and to investigate factors that improve postinjury employment opportunities and long-term health. This association should be examined in additional locations, with different study conditions, or using additional data on pre-injury risk factors

Caruso CC, Arbour MW, Berger AM, Hittle BM, Tucker S, Patrician PA, et al. Research priorities to reduce risks from work hours and fatigue in the healthcare and social assistance sector. *American Journal of Industrial Medicine*. 2022; 65(11):867-877.

<https://doi.org/10.1002/ajim.23363>

Abstract: BACKGROUND: The services of Healthcare and Social Assistance (HCSA) workers are needed by society around the clock. As a result, these workers are exposed to shift work and long work hours. The combination of demanding work schedules and other hazards in the HCSA work environment increases the health and safety risks to these workers, as well as to their patients/clients and the public. METHODS: This paper has three aims: (1) provide an overview of the burden of shift work, long hours, and related sleep and fatigue problems in this sector; (2) suggest research priorities that would improve these; and (3) discuss potential positive impacts of addressing these research priorities for the health and safety of workers and the public. The authors used a modified Delphi approach to anonymously rank-order priorities for improving HCSA worker health and safety and public safety. Input was also obtained from attendees at the 2019 National Institute for Occupational Safety and Health (NIOSH) Work Hours, Sleep, and Fatigue Forum. RESULTS: The highest rated research priorities were developing better designs for work schedules, and improving the HCSA culture and leadership approaches to shift work and long work hours. Additional priorities are identified. CONCLUSION: Research in these priority areas has the potential to benefit HCSA workers as well as their patients/clients, employers, and society

Crudden A and Steverson A. Job retention: perspectives of individuals with blindness and low vision. *Journal of Vocational Rehabilitation*. 2022; 57(2):127-140.

<https://doi.org/10.3233/JVR-221204>

Forthun I, Waage S, Pallesen S, Moen BE, and Bjorvatn B. A shift to something better? A longitudinal study of work schedule and prescribed sleep medication use in nurses. *Occupational and Environmental Medicine*. 2022; 79:752-757.

<https://doi.org/10.1136/oemed-2022-108251>

Abstract: OBJECTIVES: To explore whether a change in work schedule was associated with a change in the probability of prescribed sleep medication use. METHODS: A longitudinal study with annual questionnaire data (2008/2009-2021, except 2019) on work schedule (day work only, shift work without nights and shift work with nights) and prescribed sleep medication use from 2028 Norwegian nurses (mean age 31.7 years, 90.5% women at baseline) who participated in the ongoing Survey of Shift work, Sleep and Health (SUSSH). Associations were estimated using a random effects model, and a fixed effects regression model in which nurses were included as their own control to account for potential unobserved confounding. RESULTS: In both models, day work was associated with a more than 50% lower probability of sleep medication use compared with shift work with nights (adjusted OR (aOR) 0.50, 95% CI 0.27 to 0.93 in the random effects model, and an aOR 0.32, 95% CI 0.14 to 0.70 in the fixed effects regression model). Shift work without nights was associated with a non-statistically

significant reduction in sleep medication use within nurses in the fixed effects regression model when compared with shift work with nights (aOR 0.66, 95% CI 0.37 to 1.20).

CONCLUSIONS: Day work was associated with a significant reduced probability of prescribed sleep medication use compared with shift work with nights. This indicates that quitting night work will improve sleep and thereby reduce hypnotic use

Granger S and Turner N. Adapting, adopting, and advancing change: a framework for future research in the psychology of occupational safety. Journal of Safety Research. 2022; 82:38-47.

<https://doi.org/10.1016/j.jsr.2022.04.004>

Abstract: **INTRODUCTION:** While there are numerous reviews of the research on the psychology of occupational safety, these studies provide weak guidance on where the research should go next. Accordingly, we introduce a simple framework for thinking about future research in this area: the adapting, adopting, and advancing change framework. This framework summarizes how external, technological, and theoretical developments have driven research in the psychology of occupational safety and uses these observations as evidence to imagine ways in which they may continue to do so. **METHOD:** We critically reviewed seminal research in the psychology of occupational safety using the adapting, adopting, and advancing change framework. Adapting to change means considering external changes such as the fluctuating nature of work and the labor market. Adopting change refers to incorporating the latest technological and technical advances to facilitate more robust research methods and analyses. Finally, advancing change refers to theoretical advances and how they will push psychology of occupational safety research forward. **RESULTS:** We highlight several avenues for future research that emerge at the convergence of the framework's three themes, including developing the safety skill construct, assessing variation in demand appraisals on safety outcomes, distinguishing safety climate from related constructs, and examining safety constructs that are usually considered as outcomes (e.g., injuries) as predictors instead. **CONCLUSIONS:** In doing so, we provide a clear structure to help researchers better identify the most effective directions for future research on the psychology of occupational safety

Igboanugo S, Chaurasia A, Bigelow PL, and Mielke JG. Biological embedding of psychosocial stressors within a sample of Canadian firefighters: an exploratory analysis. Journal of Occupational & Environmental Medicine. 2022; 64(10):856-864.

<https://doi.org/10.1097/JOM.0000000000002590>

Abstract: **OBJECTIVE:** We wanted to determine whether the biological embedding of perceived psychosocial stress could be observed within a sample of Canadian firefighters. **METHODS:** We collected sociodemographic and general health-related information from 58 firefighters. In addition, measures of work-related and general life psychosocial stress, perceived social support, and physiological parameters thought to reflect the embedding of stress were gathered and analyzed using analysis of variance and linear regression models.

RESULTS: Despite observing a positive relationship between psychosocial stress and allostatic load, the association was not significant; however, age did significantly predict allostatic load ($B = 0.09$, $P = 0.04$). Notably, our participants reported abundant social support that was inversely associated with perceived stress. CONCLUSIONS: Although perceived stress did not significantly affect allostatic load in our sample, high levels of social support may have provided an important countervailing force

Jones TM, Jeung C, Schulte A, Lewis CM, and Maddox PJ. Hourly wages and turnover of community health workers according to US state certification policy and Medicaid reimbursement, 2010-2021. American Journal of Public Health. 2022; 112(10):1480-1488.

<https://doi.org/10.2105/AJPH.2022.306965>

Abstract: Objectives. To evaluate the effects of state community health worker (CHW) certification programs and Medicaid reimbursement for CHW services on wages and turnover. Methods. A staggered difference-in-differences design was used to compare CHWs in states with and without CHW certification or CHW Medicaid reimbursement policies. Data were derived from the 2010 to 2021 Current Population Survey in the United States. Results. CHW wages increased by \$2.42 more per hour in states with certification programs than in states without programs ($P = .04$). Also, hourly wages increased more among White workers, men, and part-time workers ($P = .04$). Wages increased by \$14.46 in the state with the earliest CHW certification program adoption ($P < .01$). Neither of the policies assessed had an effect on occupational turnover. Conclusions. CHW wages are higher in states with certification programs. However, wage gaps exist between Whites and non-Whites and between men and women. Public Health Implications. Federal, state, and employer-based strategies are needed to establish and sustain effective CHW programs to meet the needs of communities experiencing health and access disparities. (Am J Public Health. 2022;112(10):1480-1488. <https://doi.org/10.2105/AJPH.2022.306965>).

Karcz K, Trezzini B, Escorpizo R, Schwegler U, and Finger M. Factors associated with sustaining work after an acquired brain injury: a scoping review. Disability and Rehabilitation. 2022; 44(21):6510-6530.

<https://doi.org/10.1080/09638288.2021.1960439>

Abstract: PURPOSE: Maintaining work in the long term represents a major challenge for people with acquired brain injury (ABI) as evidenced by a high rate of premature labour market dropouts. The present study aimed to compile factors associated with working in the long term after sustaining an ABI. MATERIALS AND METHODS: We carried out a scoping review synthesizing quantitative and qualitative research conducted between 2000 and 2021. Databases searched comprised PubMed, CINAHL Complete, PsycINFO, Scopus, and Web of Science. RESULTS: Ten quantitative and nine qualitative studies were included, all but one from high-resource countries. Quantitative research predominantly comprised longitudinal follow-ups on individuals' work status several years post ABI onset, showing an effect of injury-related and sociodemographic factors. Qualitative studies mostly dealt with work

maintenance and revealed a key role of cognitive difficulties, psychological personal factors (e.g., adequate coping strategies) and environmental factors (e.g., flexible work schedules, supportive colleagues). **CONCLUSIONS:** The factors identified in our review should receive particular attention in vocational integration and job retention programs to support work participation of people with ABI in the long term. There is a need for measures that regularly monitor and promote a good match between individuals and their work environment. **Implications for Rehabilitation** People with acquired brain injury (ABI) often have long-lasting and invisible injury-related difficulties that hamper their labour market participation. Factors identified as positively associated with working in the long term, such as coping strategies and self-awareness, should be strengthened. Future interventions should educate affected persons, employers and health care professionals about long-lasting injury-related difficulties and promote a supportive work environment for people with ABI. Prolonged availability of vocational services could be beneficial for supporting work maintenance of people with ABI

Li K and Griffin MA. Safety behaviors and job satisfaction during the pandemic: the mediating roles of uncertainty and managerial commitment. *Journal of Safety Research*. 2022; 82:166-175.

<https://doi.org/10.1016/j.jsr.2022.05.008> [open access]

Abstract: **INTRODUCTION:** As the Covid-19 pandemic affects the world, disruptions to work routines impose a psychological burden on people, and thus can affect their job performance and well-being. We conducted an empirical study to explore the links between the experience of Covid-19 and workers' safety behaviors and well-being outcome of job satisfaction. **METHOD:** Structural equation modelling (SEM) with a sample of 515 safety workers was conducted to simultaneously test the links among these constructs. **RESULTS:** Experience of Covid-19 was associated with lower employee job satisfaction, explained by higher psychological uncertainty and decreased perception of managerial commitment to safety. Notably, contrasting pathways from experience of Covid-19 to safety behaviors were found. On the one hand, higher psychological uncertainty caused by the pandemic was associated with lower perceptions of managerial safety commitment; and lower perceived managerial safety commitment was linked to reduced safety compliance and safety participation. On the other hand, experience of Covid-19 in this study showed unexpected positive direct links with safety behaviors, which might be explained by workers' enhanced safety knowledge, motivation, and status of mindfulness due to Covid-19 related safety instructions and communications. **CONCLUSIONS:** This exploratory study helps to deepen the understanding of workplace safety and well-being in the context of pandemic and in times of uncertainty. **PRACTICAL APPLICATIONS:** The practical insights are useful for applying appropriate strategies for managing the Covid-19 crisis, coping with uncertainties, and building a healthier and safer workplace in the long run

Macan J, Babic Z, Hallmann S, Havmose MS, Johansen JD, John SM, et al. Respiratory toxicity of persulphate salts and their adverse effects on airways in hairdressers: a systematic review. *International Archives of Occupational & Environmental Health*. 2022; 95(8):1679-1702.

<https://doi.org/10.1007/s00420-022-01852-w> [open access]

Abstract: Objective: To review the literature on respiratory effects of persulfate salts (PS) or hair bleaches in hairdressers and animal models exploring mechanisms behind PS-induced asthma. Methods: A systematic review according to the PRISMA guidelines was performed. Studies published from 2000 to July 2021 that fulfilled predefined eligibility criteria were retrieved. Data were not quantitatively synthesized due to the heterogeneity of study designs, outcomes and methods. Results: Forty-two articles were included. PS are indicated as the main cause of occupational rhinitis and asthma in hairdressers, and one of the leading causes of occupational asthma in some European countries. Bleaching products are indicated as the most important factor for development of respiratory symptoms, lung function decline, and leaving the hairdressing profession. Risk estimates from a good quality prospective study showed up to 3.9 times higher risk for wheezing and breathlessness in hairdressers aged = 40 years than in matched controls, and 20 times higher risk in hairdressers to develop respiratory symptoms from exposure to bleaching powder than controls. Pathophysiological mechanisms of the respiratory response to PS are not yet fully elucidated, but may include non-specific and specific immune responses. Conclusions: Hairdressing is associated with a wide spectrum of respiratory adverse effects, of which bleaching products were indicated as the most hazardous. Preventive measures for reducing inhalatory exposure to PS in hair salons should be re-evaluated, including adopting occupational exposure limits at EU level, and encouraging use of safer bleach formulations. Prospero registration number: CRD42021238118.

Rinsky-Halivni L, Hovav B, Christiani DC, and Brammli-Greenberg S. Aging workforce with reduced work capacity: from organizational challenges to successful accommodations sustaining productivity and well-being. *Social Science & Medicine*. 2022; 312:115369.

<https://doi.org/10.1016/j.socscimed.2022.115369> [open access]

Abstract: Israel is experiencing accelerated workforce aging and increasing retirement age that began in the last two decades. Aging workers suffer from increased illness and impairment rates, challenging employing organizations with reduced work capacity. Occupational health practitioners often assist employers in accommodating these challenges. However, insufficient evidence on prognostic factors, organizational practices, and age management tools hamper successful accommodation. Research on the organizational perceptions of aging workers is also limited. Our study aims to (1) identify the domains in which the aging workforce challenges Israeli organizations according to a multi-level theoretical model we developed, and (2) assess the practices employed by organizations to address the declines in work capacity from employers' and workers' perspectives. Our qualitative study employed semi-structured interviews of 26 employers and workers'

representatives from eight Israeli organizations sampled by maximum variation according to organizational characteristics. Thematic framework analysis of organizational perceptions on challenges, facilitators, and practices in use, via aging workers' cases was utilized. We identified organizational challenges on five levels: individual worker, work environment, interpersonal team relationships, organization, and community relationships, stemming from the aging workers' reduced capacity to meet job demands and conditions. Time adjustments, work environment changes, and job task changes were common accommodations practices used by the organizations. Successful accommodations from the employers' perspective preserved workers' and teams' productivity, and from the workers' perspective, those that lowered demand and improved job control without damaging earnings or job status. Taken together, organizations from all economic sectors should prepare for the increasing need to accommodate work conditions for aging workers with limitations to preserve their health and safety. Balancing employers' and workers' perspectives when accommodating workers with reduced work capacity is imperative to promote healthy aging at the workplace. Government intervention is advised to encourage continued job participation to reduce employment termination

Styra R, Hawryluck L, McGeer A, Dimas M, Lam E, Giacobbe P, et al. Support for health care workers and psychological distress: thinking about now and beyond the COVID-19 pandemic. *Health Promotion and Chronic Disease Prevention in Canada*. 2022; 42(10):421-430.

<https://doi.org/10.24095/hpcdp.42.10.01>

Abstract: INTRODUCTION: This study explores the relationship between emotional support, perceived risk and mental health outcomes among health care workers, who face high rates of burnout and mental distress since the beginning of the COVID-19 pandemic. METHODS: A cross-sectional, multicentred online survey of health care workers in the Greater Toronto Area, Ontario, Canada, during the first wave of the COVID-19 pandemic evaluated coping strategies, confidence in infection control, impact of previous work during the 2003 SARS outbreak and emotional support. Mental health outcomes were assessed using the Generalized Anxiety Disorder scale, the Impact of Event Scale - Revised and the Patient Health Questionnaire (PHQ-9). RESULTS: Of 3852 participants, 8.2% sought professional mental health services while 77.3% received emotional support from family, 74.0% from friends and 70.3% from colleagues. Those who felt unsupported in their work had higher odds ratios of experiencing moderate and severe symptoms of anxiety (odds ratio [OR] = 2.23; 95% confidence interval [CI]: 1.84-2.69), PTSD (OR = 1.88; 95% CI: 1.58-2.25) and depression (OR = 1.88; 95% CI: 1.57-2.25). Nearly 40% were afraid of telling family about the risks they were exposed to at work. Those who were able to share this information demonstrated lower risk of anxiety (OR = 0.58; 95% CI: 0.48-0.69), PTSD (OR = 0.48; 95% CI: 0.41-0.56) and depression (OR = 0.55; 95% CI: 0.47-0.65). CONCLUSION: Informal sources of

support, including family, friends and colleagues, play an important role in mitigating distress and should be encouraged and utilized more by health care workers

Whitehead C, Maier MA, Rao MB, Eturki M, Snawder JE, and Davis KG. Impact of ergonomic posture on the chemical exposure of workers in the petroleum and chemical industry. *Annals of Work Exposures and Health*. 2022; 66(8):1022-1032.

<https://doi.org/10.1093/annweh/wxac033>

Abstract: OBJECTIVES: Despite a rise in automation, workers in the petroleum refining and petrochemical manufacturing industry are potentially exposed to various chemicals through inhalation while performing routine job duties. Many factors contribute to the degree of exposure experienced in this setting. The study objective was to characterize the impact of workplace conditions, anthropometric variability, and task orientation on exposure for a simulated routine operations task. METHODS: A chemical exposure laboratory simulation study was designed to evaluate the dependent variable of chemical exposure level in the breathing zone for methane and sulfur hexafluoride. The independent variables were (i) posture of the worker, (ii) worker anthropometry, (iii) process configuration, and (iv) gas density. RESULTS: Pipe height was a significant predictor of gas concentration measured in the breathing zone when located in a position that encouraged the gas to enter the breathing zone of the worker. Worker anthropometry had a major impact; tall worker's (male) chemical concentrations exceeded those of the short worker (female) for methane simulations but the opposite resulted for sulfur hexafluoride. Also, worker posture had a significant impact on gas exposure where nonneutral postures were found to have higher levels of chemical concentration. CONCLUSIONS: The study findings indicate that the breathing zone location is altered by posture and worker height, which changes the exposures relative to the emission source depending on the gas density of the chemicals that are present. As a result, qualitative risk assessment cannot be performed accurately without accounting for these factors. Practically, controls may need to account for worker size differences and posture adaptations

Young MT, Perez-Lua F, Sarnoff H, Plancarte V, Goldman-Mellor S, and Payan DD. Working around safety net exclusions during the COVID-19 pandemic: a qualitative study of rural Latinx immigrants. *Social Science & Medicine*. 2022; 311:115352.

<https://doi.org/10.1016/j.socscimed.2022.115352> [open access]

Abstract: Rural Latinx immigrants experienced disproportionately negative health and economic impacts during the COVID-19 pandemic. They contended with the pandemic at the intersection of legal status exclusions from the safety net and long-standing barriers to health care in rural regions. Yet, little is known about how rural Latinx immigrants navigated such exclusions. In this qualitative study, we examined how legal status stratification in rural contexts influenced Latinx immigrant families' access to the safety net. We conducted interviews with first- and second-generation Latinx immigrants (n = 39) and service providers (n = 20) in four rural California communities between July 2020 and April 2021. We examined personal and organizational strategies used to obtain economic, health, and other forms of

support. We found that Latinx families navigated a limited safety net with significant exclusions. In response, they enacted short-term strategies and practices - workarounds - that met immediate, short-term needs. Workarounds, however, were enacted through individual efforts, allowing little recourse beyond immediate personal agency. Some took the form of strategic practices within the safety net, such as leveraging resources that did not require legal status verification; in other cases, they took the form of families opting to avoid the safety net altogether.

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