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**May 17, 2019**

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**\*Fan JK, Mustard C, and Smith PM. Psychosocial work conditions and mental health: examining differences across mental illness and well-being outcomes. *Annals of Work Exposures and Health*. 2019; [epub ahead of print].**

<https://doi.org/10.1093/annweh/wxz028>

Abstract: OBJECTIVES: Psychosocial work conditions are determinants of mental illness among worker populations. However, while the focus on negative aspects of mental health has generated important contributions to the development of workplace interventions, there is less evidence on the factors that support the positive aspects of mental well-being. This study aimed to examine the association between psychosocial work conditions and mental health outcomes among a representative sample of Canadian workers; and to assess whether the relationships are consistent across measures of mental illness versus mental well-being. METHODS: Population-based data were obtained from the cross-sectional 2012 Canadian Community Health Survey. Psychosocial work conditions were measured using an abbreviated version of the Job Content Questionnaire. For mental illness, we focused on major depressive episodes, generalized anxiety disorders, and bipolar disorders in the past 12 months, as measured using Composite International Diagnostic Interview criteria. Mental well-being was defined as having flourishing mental health, based on items from the Mental Health Continuum-Short Form. Regression models provided odds ratios (ORs) and fitted probabilities for the relationship between work conditions and mental health, adjusting for covariates. RESULTS: Higher levels of job control, social support, and job security were associated with being free of disorders (ORs ranging from 1.08 to 1.15) as well as having flourishing

mental health (ORs ranging from 1.10 to 1.14). Lower physical effort was associated with decreased odds of having flourishing mental health (OR 0.89). Psychological demands were not associated with any of the mental health outcomes in the fully-adjusted models. The overall pattern of these relationships was consistent across the two outcome models, although there was evidence of heterogeneity on the absolute probability scale. Specifically, there was a relatively stronger relationship between job control/social support/physical demands and well-being outcomes, compared with disorder outcomes. CONCLUSIONS: Psychosocial work conditions were associated with both negative and positive measures of mental health. However, mental illness and mental well-being may represent complementary, yet distinct, aspects in relation to psychosocial work conditions. Interventions targeting the psychosocial work environment may serve to improve both of these dimensions, although the measurement and examination of specific dimensions may be required to obtain an integrated and comprehensive understanding of mental health in the workplace

**\*Mitchell MS, Orstad SL, Biswas A, Oh PI, Jay M, Pakosh MT, et al. Financial incentives for physical activity in adults: systematic review and meta-analysis. British Journal of Sports Medicine. 2019; [epub ahead of print].**

<https://doi.org/10.1136/bjsports-2019-100633>

Abstract: Objective The use of financial incentives to promote physical activity (PA) has grown in popularity due in part to technological advances that make it easier to track and reward PA. The purpose of this study was to update the evidence on the effects of incentives on PA in adults. Data sources Medline, PubMed, Embase, PsychINFO, CCTR, CINAHL and COCH. Eligibility criteria Randomised controlled trials (RCT) published between 2012 and May 2018 examining the impact of incentives on PA. Design A simple count of studies with positive and null effects ('vote counting') was conducted. Random-effects meta-analyses were also undertaken for studies reporting steps per day for intervention and post-intervention periods. Results 23 studies involving 6074 participants were included (64.42% female, mean age = 41.20 years). 20 out of 22 studies reported positive intervention effects and four out of 18 reported post-intervention (after incentives withdrawn) benefits. Among the 12 of 23 studies included in the meta-analysis, incentives were associated with increased mean daily step counts during the intervention period (pooled mean difference (MD), 607.1; 95% CI: 422.1 to 792.1). Among the nine of 12 studies with post-intervention daily step count data incentives were associated with increased mean daily step counts (pooled MD, 513.8; 95% CI: 312.7 to 714.9). Conclusion Demonstrating rising interest in financial incentives, 23 RCTs were identified. Modest incentives (\$1.40 US/day) increased PA for interventions of short and long durations and after incentives were removed, though post-intervention 'vote counting' and pooled results did not align. Nonetheless, and contrary to what has

been previously reported, these findings suggest a short-term incentive 'dose' may promote sustained PA

**Colagiuri B, Sharpe L, and Scott A. The blind leading the not-so-blind: a meta-analysis of blinding in pharmacological trials for chronic pain.**

**Journal of Pain. 2019; 20(5):489-500.**

<https://doi.org/10.1016/j.jpain.2018.09.002>

Abstract: Patient blinding is a critical feature of double-blind placebo-controlled randomized controlled trials (RCTs). Yet, very little is known about practices for assessing and reporting blinding in chronic pain trials. We examined the rates and predictors of assessing blinding and its success in pharmacological RCTs for chronic pain. Four-hundred eight trials (n = 103,983 participant) were identified via a systematic search between 2006 and 2016. Only 23 RCTs (5.6%) reported assessing patient blinding. Larger sample size, reference to a CONSORT statement, and pharmaceutical sponsorship were associated with lower rates of assessing blinding. A meta-analysis of the available data using Bang's Blinding Index indicated that blinding was not successful when combined across studies (g = 1.12, 95% confidence interval.92-2.01). Moderator analysis revealed that higher rates of adverse events and larger treatment effect sizes were associated with worse blinding outcomes, whereas including "don't know" responses seemed to improve blinding. Overall then, blinding is rarely reported and often fails in RCTs of pharmacological interventions for chronic pain. To address this finding, we recommend that all researchers conducting RCTs for chronic pain assess and report on the status of patient blinding when reporting the trial outcome. Perspective(s): This meta-analysis examined patient blinding in pharmacological RCTs of chronic pain. The results indicated that blinding is rarely assessed and often fails. Some study characteristics were associated with lower rates of assessing blinding and its success, for example, pharmaceutical sponsorship and side effects. Implications and recommendations for chronic pain RCTs are discussed. Copyright © 2018 the American Pain Society

**Genin P, Beaujouan J, Thivel D, and Duclos M. Is workplace an appropriate setting for the promotion of physical activity? A new framework for worksite interventions among employees. Work. 2019; 62(3):421-426.**

<https://doi.org/10.3233/WOR-192873>

Abstract: Although the evolution of human occupational tasks has been encouraging with a shift from an active lifestyle to a more sedentary way of life, workplaces have also been suggested as a new strategic opportunity to promote physical activity. While there is a growing body of literature regarding the effect of worksite physical activity interventions, there is a need to improve these interventions, their objectives and implementation. This Sounding Board article proposes for the first time a framework regarding the implementation of such interventions within the workplace, suggesting a joint approach combining physical activity and health specialists as well as ergonomists that are experts in human work sciences

**Goerke L. Absence from work, sick pay and positional consumption concerns. *Labour*. 2019; 33(2):187-211.**

<https://doi.org/10.1111/labr.12144>

**Haas EJ and Yorio PL. The role of risk avoidance and locus of control in workers' near miss experiences: implications for improving safety management systems. *Journal of Loss Prevention in the Process Industries*. 2019; 59:91-99.**

<https://doi.org/10.1016/j.jlp.2019.03.005>

**Hammer LB, Truxillo DM, Bodner T, Pytlovany AC, and Richman A. Exploration of the impact of organisational context on a workplace safety and health intervention. *Work and Stress*. 2019; 33(2):192-210.**

<https://doi.org/10.1080/02678373.2018.1496159>

**Hosseinian SM, Zhu Y, Mehta RK, Erraguntla M, and Lawley MA. Static and dynamic work activity classification from a single accelerometer: implications for ergonomic assessment of manual handling tasks. *IIE Transactions on Occupational Ergonomics and Human Factors*. 2019; 7(1):59-68.**

<https://doi.org/10.1080/24725838.2019.1608873>

**Johnson SJ, Willis SM, and Evans J. An examination of stressors, strain, and resilience in academic and non-academic U.K. university job roles. *International Journal of Stress Management*. 2019; 26(2):162-172.**

<http://doi.org/10.1037/str0000096>

Abstract: Recent years have seen changes within the academic profession including decreased perceptions of autonomy and job security, increasing student numbers and teaching quality focus, and greater emphasis on high-quality research outputs. Such changes arguably lead to increased workplace stress, and given the potential negative impact of high workplace stress levels on health and work-related outcomes, a consideration of stressors and strain within academia is timely. In this article, we compared stressors and strain across U.K. academic and non-academic university job roles. The article also determines which stressors are the strongest drivers of poor health and considers the role of resilience in the stressor-strain relationship. The sample consisted of participants from three U.K. universities using the ASSET (A Shortened Stress Evaluation Tool) stress measure that gives information on eight stressors and two measures of strain (psychological and physical ill-health). As data sets varied across organizations, different subsamples were used for analysis, with sample sizes of N = 2,779 to N = 652, with the majority of the analysis using the smaller sample. Academics reported better physical health, higher levels of work overload, poorer work-life balance, better job conditions and work relationships, and less concern about pay and benefits in comparison with non-academic employees. For both academic and non-academic staff, the stressors work-life balance and aspects of the job were associated with psychological and physical ill-health, and stressors

that impact ill-health did not differ by job type. Resilience had a direct effect on psychological and physical ill-health as well as an indirect effect by influencing perceptions of stressors. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

**Leung N, Yuspeh L, Kalia N, Lavin R, Tsourmas N, Bernacki E, et al. Significant decreasing trend in back injuries in a multi-employer environment: a follow-up study. Journal of Occupational and Environmental Medicine. 2019; 61(5):e200-e205.**

<https://doi.org/10.1097/JOM.0000000000001568>

Abstract: BACKGROUND: A significant decrease in back injury claims were observed in a single employer. OBJECTIVE: To validate whether back injury claims are decreasing in a multiemployer environment within a non-monopolistic state and quantify the risk of delayed return-to-work and adverse cost of injured workers with back injuries. METHODS: 36,463 claims from 1998-2015 were analyzed with descriptive statistics and multivariate logistic and Cox-Proportional Hazards models. RESULTS: Back injury claims decreased three-fold (5.02 to 1.60 per 1,000 employees) and were more likely to have claim costs over \$100,000 (odds ratio = 2.41) and delayed return-to-work (hazard ratio = 1.16). CONCLUSION: Back injury claims are decreasing in a multiemployer environment within a non-monopolistic state

**Makikangas A, Mauno S, Selenko E, K, and Kinnunen U. Toward an understanding of a healthy organizational change process: a three-wave longitudinal study among university employees. International Journal of Stress Management. 2019; 26(2):204-212.**

<http://dx.doi.org/10.1037/str0000059>

Abstract: This study aimed to improve our understanding of what constitutes a healthy organizational change process among university employees. Positive attitudes and proactive participation toward organizational change were presumed to affect and be affected by personality resources measured via core self-evaluations and work-related motivational well-being (vigor). The study used 3-wave longitudinal data collected in 2 large Finnish universities during their recent process of organizational change (N = 926). Structural equation modeling was used to establish the direction of the relationships between the variables. The results showed that high levels of both core self-evaluations and vigor were associated with more favorable perceptions of organizational change: employees high in core self-evaluations and vigor were more satisfied with the changes and the information provided about the changes, and were also more likely to be actively involved in the change process. It was further found that positive attitudes to change mediated the relation between vigor and core self-evaluations: vigorous employees perceived the organizational changes more positively, which in turn strengthened their internal self-evaluations. Overall, these longitudinal results show that, among university employees, core self-evaluations and vigor are both important resource factors influencing perceptions

and reactions to organizational changes. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

**Marshall IJ, Marshall R, Wallace BC, Brassey J, and Thomas J. Rapid reviews may produce different results to systematic reviews: a meta-epidemiological study. Journal of Clinical Epidemiology. 2019; 109:30-41. <https://doi.org/10.1016/j.jclinepi.2018.12.015>**

Abstract: OBJECTIVE: To simulate possible changes in systematic review results if rapid review methods were used. STUDY DESIGN AND SETTING: We recalculated meta-analyses for binary primary outcomes in Cochrane systematic reviews, simulating rapid review methods. We simulated searching only PubMed, excluding older articles (5, 7, 10, 15, and 20 years before the search date), excluding smaller trials (<50, <100, and <200 participants), and using the largest trial only. We examined percentage changes in pooled odds ratios (ORs) (classed as no important change [<5%], small [<20%], moderate [<30%], or large [ $\geq$ 30%]), statistical significance, and biases observed using rapid methods. RESULTS: Two thousand five hundred and twelve systematic reviews (16,088 studies) were included. Rapid methods resulted in the loss of all data in 3.7-44.7% of meta-analyses. Searching only PubMed had the smallest risk of changed ORs (19% [477/2,512] were small changes or greater; 10% [260/2,512] were moderate or greater). Changes in ORs varied substantially with each rapid review method; 8.4-21.3% were small, 1.9-8.8% were moderate, and 4.7-34.1% were large. Changes in statistical significance occurred in 6.5-38.6% of meta-analyses. Changes from significant to nonsignificant were most common (2.1-13.7% meta-analyses). We found no evidence of bias with any rapid review method. CONCLUSION: Searching PubMed only might be considered where a approximately 10% risk of the primary outcome OR changing by >20% could be tolerated. This could be the case in scoping reviews, resource limitation, or where syntheses are needed urgently. Other situations, such as clinical guidelines and regulatory decisions, favor more comprehensive systematic review methods

**Milner A, Scovelle AJ, King TL, and Madsen I. Exposure to work stress and use of psychotropic medications: a systematic review and meta-analysis. Journal of Epidemiology & Community Health. 2019; 73(6):569-576. <https://doi.org/10.1136/jech-2018-211752>**

Abstract: BACKGROUND: There is good evidence that job stressors are prospectively related to mental health problems, particularly depressive symptoms. This review aimed to examine whether job stressors were also related to use of psychotropic medications. METHODS: Using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses approach, we examined seven electronic databases that indexed literature from a wide range of disciplines. Inclusion criteria were (1) the study included a job stressor or psychosocial working condition as an exposure, and (2) psychotropic medication was an outcome. All effect-size estimates were considered but needed to present

either a SE or 95% CIs to be included in meta-analyses. Data were pooled between studies using the relative risk (RR) or odds ratio (OR) and 95% CIs. RESULTS: There were 18 unique studies with non-overlapping exposures eligible for inclusion in the quantitative meta-analysis. High job demands were associated with a statistically significant increased risk of psychotropic medication use (RR 1.16, 95% CI 1.02 to 1.31). There was also an elevated RR in relation to work-family conflict (RR 1.26, 95% CI 1.03 to 1.48). In studies reporting OR, high job demands were associated with an OR of 1.39 (95% CI 1.06 to 1.71). CONCLUSIONS: The findings of this review highlight the need for policy and programme attention to reduce harmful exposure to psychosocial job stressors. Health-service use measures should be considered as outcomes and may represent more severe mental health conditions

**Thapa N, Tomasi SE, Cox-Ganser JM, and Nett RJ. Non-malignant respiratory disease among workers in the rubber manufacturing industry: a systematic review and meta-analysis. American Journal of Industrial Medicine. 2019; 62(5):367-384.**

<https://doi.org/10.1002/ajim.22959>

Abstract: BACKGROUND: Non-malignant respiratory disease (NMRD) cases have occurred among rubber manufacturing workers. We examined exposure to rubber manufacturing emissions as a risk factor for NMRD. METHODS: From a systematic literature review, we identified case reports and assessed cross-sectional and mortality studies for strength of evidence of positive association (strong, intermediate, non-significant positive association, none) between exposure to rubber manufacturing emissions and NMRD-related morbidity and mortality, and conducted two meta-analyses. RESULTS: We analyzed 62 articles. We identified 11 cases of NMRD. Nine (30%) of 30 cross-sectional studies and one (4%) of 26 mortality studies had strong evidence. The summary odds ratio and SMR for the cross-sectional and mortality meta-analyses were 3.83 (95% confidence interval [CI], 2.28-6.51) and 0.90 (95%CI, 0.82-0.99), respectively. CONCLUSION: Available evidence supports rubber manufacturing emissions as a potential risk factor for NMRD-related morbidity. Further investigations with longer follow-up periods and inclusion of short-tenured workers could further define risks for NMRD and identify prevention strategies

**Van Laethem M, Beckers DGJ, de Bloom J, Sianoja M, and Kinnunen U. Challenge and hindrance demands in relation to self-reported job performance and the role of restoration, sleep quality, and affective rumination. Journal of Occupational and Organizational Psychology. 2019; 92(2):225-254.**

<https://doi.org/10.1111/joop.12239>

Abstract: Longitudinal research on the relationship between job demands and job performance and its underlying mechanisms is scarce. The aims of this longitudinal three-wave study among 920 Finnish employees were to ascertain whether (1) challenge job demands (i.e., workload, cognitive demands) and self-

reported job performance are positively related over time, (2) job insecurity (i.e., a hindrance demand) and job performance are negatively related over time, (3) restorative experiences during off-job time and sleep quality are underlying mechanisms in these relations, and (4) affective rumination mediates the proposed relations of job demands and job insecurity with restoration and sleep quality. Self-report data were analysed with structural equation modelling. The results revealed a positive, temporal relationship between challenge job demands and job performance (task and contextual performance) across 1 year, but no temporal relationship between job insecurity and self-reported job performance. Moreover, high challenge job demands were positively related to the restorative value of off-job activities, and favourable restoration was positively related to subsequent task performance. Finally, affective rumination mediated the relationship of challenge job demands with both restoration and sleep quality. Job insecurity was not longitudinally related to restoration, sleep quality, or affective rumination. The implications of our findings for occupational health psychology are discussed. Practitioner points Provide employees with sufficient job resources (e.g., high autonomy and social support) to adequately deal with high job demands. Allow employees sufficient time to recover from high job demands during off-job time and provide training sessions in recovery, relaxation, meditation, and goal setting. Employees may attempt to counteract perseverative thoughts by actively pursuing distracting restoration activities (e.g., exercise, meditation)

**Yazdani A, Sawicki B, Schwenck G, and Wells R. Awareness of musculoskeletal disorders hazards and controls in micro and small businesses in Ontario, Canada. IISE Transactions on Occupational Ergonomics and Human Factors. 2019; 7(1):12-21.**  
<https://doi.org/10.1080/24725838.2019.1565870>

\*IWH authored publications.