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January 18, 2019

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***Jetha A, Shaw R, Sinden AR, Mahood Q, Gignac MA, McColl MA, et al. Work-focused interventions that promote the labour market transition of young adults with chronic disabling health conditions: a systematic review. Occupational and Environmental Medicine. 2019; [Epub ahead of print]. <https://doi.org/10.1136/oemed-2018-105454> [open access]**

Abstract: OBJECTIVE: Young adulthood is an important transitional life phase where careers are established. Young adults with chronic disabling health conditions are underrepresented in the labour market. Our study aims to examine the effectiveness of work-focused interventions that support the labour market transition of young adults with chronic disabling health conditions; and to examine whether the effectiveness of work-focused interventions differ across work transition phase (eg, preparation, entry and sustaining work, employment advancement) and disability type. METHODS: A systematic review of articles published between January 1990 and July 2018 was conducted. Medline, EMBASE and PsycInfo were searched, and titles/abstracts and full texts of articles were reviewed for eligibility. Relevant articles were appraised for methodological quality. A best evidence synthesis was applied to medium-quality/high-quality studies to develop recommendations. RESULTS: 5816 articles were identified; 10 articles were relevant and of moderate-high methodological quality. Six intervention categories were identified which focused on young adults with mental health or intellectual/learning disabilities (n=3) and addressed employment preparation (n=10) and/or work entry (n=9). No interventions addressed at-work issues or career advancement. Strong evidence existed for tailored supported employment (SE) interventions having a positive impact on preparation and entry into competitive employment. Also, moderate

evidence existed for the positive impact of SE on preparation and entry into competitive employment for young adults with mental health conditions. CONCLUSIONS: Tailored SE is recommended to foster preparation and entry into the labour market. Evidence-based interventions are needed to facilitate sustained work and career advancement of young adults living with different disabling health conditions

Al-Bayati AJ and York DD. Fatal injuries among Hispanic workers in the U.S. construction industry: findings from FACE investigation reports. Journal of Safety Research. 2018; 67:117-123.

<https://doi.org/10.1016/j.jsr.2018.09.007>

Abstract: INTRODUCTION: Identifying and understanding the characteristics of workplace accidents can provide vital information required to clarify their causes and prevent similar accidents from happening in the future. The Hispanic workforce represents a significant segment of the U.S. construction labor force that is projected to continue increasing in population. The government statistical data show higher rates of fatalities among Hispanic workers when compared to other ethnic groups. METHOD: This study aims to provide details about the trends of fatal injuries among Hispanic workers. The study examined 92 government investigation reports to reveal the general trends, then an examination of fatal fall injuries within the study sample was conducted since falling is the predominant cause of fatal injuries. RESULTS: The findings suggest differences in accident characteristics between Hispanic workers and all workers, which could indicate a need for different interventions to improve the overall site safety. The study also revealed the dire need to propose revised investigation procedures that would help identify the root causes of accidents, which in turn leads to better recommendations and interventions

Amaro J, Magalhaes J, Leite M, Aguiar B, Ponte P, Barrocas J, et al. Musculoskeletal injuries and absenteeism among healthcare professionals: ICD-10 characterization. PLoS ONE. 2018; 13(12):e0207837.

<https://doi.org/10.1371/journal.pone.0207837> [open access]

Abstract: INTRODUCTION: Healthcare workers account for 10% of the EU's total workforce, with a significant proportion of those employed in hospitals. Musculoskeletal injuries are the predominant group of injuries in healthcare professionals due to the physical demands of their work, such as the mobilization and positioning of the dependent patients. The management of this type of problem should take into account direct and indirect costs, such as periods of incapacity for work due to illness, hiring and training of new employees during periods of absence, reduced levels of productivity and the effects on production and quality of work. OBJECTIVES: 1-Characterization of injuries resulting from occupational accidents in hospital workers according to the International Classification of Diseases ICD-10; 2-Identification of the predictive factors of absenteeism duration due to temporary work incapacity in workplace accidents. METHODS: A retrospective observational study was conducted based on the

analysis of 1621 cases of work-related accidents of employees of Centro Hospitalar Sao Joao from January 2011 to December 2014. An ICD-10 classification code was associated with each of the accident cases, based on pre-established criteria for classification of the specific diagnoses of musculoskeletal injuries. The duration of temporary work incapacity was compared between the categories of sociodemographic variables, among six categories of ICD-10 primary diagnosis (reclassification), and between the two major chapters of ICD-10 classification-chapter XIX (direct trauma) and chapter XIII (indirect trauma-strain injuries). The sociodemographic predictors of the occurrence of strain injuries were determined by logistic regression. A multinomial logistic regression analysis was conducted with selection of duration of work incapacity as the dependent variable. RESULTS: A total of 824 cases of musculoskeletal injuries occurred on hospital premises during the study period, which corresponded to a total of 22159 lost workdays in the context of temporary work incapacity due to work injury. According to the ICD-10 reclassification, the three most frequent diagnostic groups were direct lower limb trauma (n = 230, 27.9%), spinal strain injuries (n = 194, 23.5%) and direct upper limb trauma (n = 174, 21.1%). Significant differences were observed in temporary work incapacity duration among the ICD-10 diagnostic categories: spinal strain injuries were the diagnostic group associated with longer duration of temporary work incapacity, with a median = 14.0 (25-75th percentile: 6.0-35.0). The only variable that demonstrated to be significantly predictive of temporary work incapacity less than or greater than 20 days was the ICD-10 diagnostic group. The regression results revealed a 5-fold increase in risk in the case of spinal strain injuries for temporary work incapacity durations of less than or greater than 20 days (OR = 5.58 and OR = 5.89 respectively). CONCLUSIONS: The study findings support the benefits of the characterization of workplace injuries by medical diagnostic groups, namely in the interpretation of the sequelae of the accidents and the medical contextualization of the accidents. Association of ICD-10 characterization can improve the analysis of workplace accidents at an institutional level, and promote the implementation of preventive measures and control of absenteeism

Bero L, Chartres N, Diong J, Fabbri A, Gherzi D, Lam J, et al. The risk of bias in observational studies of exposures (ROBINS-E) tool: concerns arising from application to observational studies of exposures. Systematic Reviews. 2018; 7(1):242.

<https://doi.org/10.1186/s13643-018-0915-2> [open access]

Abstract: BACKGROUND: Systematic reviews, which assess the risk of bias in included studies, are increasingly used to develop environmental hazard assessments and public health guidelines. These research areas typically rely on evidence from human observational studies of exposures, yet there are currently no universally accepted standards for assessing risk of bias in such studies. The risk of bias in non-randomised studies of exposures (ROBINS-E) tool has been developed by building upon tools for risk of bias assessment of randomised trials, diagnostic test accuracy studies and observational studies of interventions. This

paper reports our experience with the application of the ROBINS-E tool. **METHODS:** We applied ROBINS-E to 74 exposure studies (60 cohort studies, 14 case-control studies) in 3 areas: environmental risk, dietary exposure and drug harm. All investigators provided written feedback, and we documented verbal discussion of the tool. We inductively and iteratively classified the feedback into 7 themes based on commonalities and differences until all the feedback was accounted for in the themes. We present a description of each theme. **RESULTS:** We identified practical concerns with the premise that ROBINS-E is a structured comparison of the observational study being rated to the 'ideal' randomised controlled trial. ROBINS-E assesses 7 domains of bias, but relevant questions related to some critical sources of bias, such as exposure and funding source, are not assessed. ROBINS-E fails to discriminate between studies with a single risk of bias or multiple risks of bias. ROBINS-E is severely limited at determining whether confounders will bias study outcomes. The construct of co-exposures was difficult to distinguish from confounders. Applying ROBINS-E was time-consuming and confusing. **CONCLUSIONS:** Our experience suggests that the ROBINS-E tool does not meet the need for an international standard for evaluating human observational studies for questions of harm relevant to public and environmental health. We propose that a simpler tool, based on empirical evidence of bias, would provide accurate measures of risk of bias and is more likely to meet the needs of the environmental and public health community

Christensen JR, Pajevic M, Ilvig PM, Sogaard K, and Jessen-Winge C. Why people engage in a weight loss intervention at their workplace: a stratified case study. BMC Public Health. 2019; 19(1):20.

<https://doi.org/10.1186/s12889-018-6346-0> [open access]

Abstract: **BACKGROUND:** The prevalence of obesity has increased significantly worldwide within the last decade. As obesity is recognised as a contributing factor when developing various health threatening chronic diseases, prevention initiatives focusing on weight loss are becoming more important. Because of the time spent at the workplace, workplaces can be optimal arenas for weight loss programs and these programs have been effective to decrease body weight. Thus, reasons for engaging in weight loss interventions needs exploring, in order to engage more workplaces in weight loss interventions. Such information provides important knowledge that may help to inform decisions of municipalities, employers and other public health decision makers, when and if implementing weight loss interventions. The aim of this study was therefore to explore reasons for employee engagement in weight loss projects at the workplace and the incentives a municipality, a manager at a home-care centre, and a project manager have to launch such project. **METHODS:** A stratified case study was conducted. A representative from the municipality, the manager at a home-care centre, the project manager of the weight loss intervention and six health-care workers were interviewed at the end of a one-year weight loss intervention at the workplace. Data were analysed using Systematic Text Condensation. **RESULTS:** Analysis identified different views and considerations for engaging in a weight

loss intervention at the workplace. For the representative of the municipality the possible economical gain of the project was in focus. The project manager and the manager of the home-care centre both reflected mainly on improvement of the healthcare workers health. For the project manager, achieving good scientific results was highlighted as well. However, the employees were influenced by several factors, such as their own health and weight loss, the pressure from the environment and their struggle for recognition. CONCLUSIONS: This study concluded that if targeting the increasing worldwide obesity problem through workplace initiated weight loss programs, the sales pitch to managements and employers have to be tailored in order to increase the participation and the motivation for the initiative. TRIAL REGISTRATION: ClinicalTrial.gov : NCT01015716 , registration data 14.12.2010 (Prospectively registered)

Dopp AR, Munday P, Beasley LO, Silovsky JF, and Eisenberg D. Mixed-method approaches to strengthen economic evaluations in implementation research. Implementation Science. 2019; 14(1):2.

<https://doi.org/10.1186/s13012-018-0850-6> [open access]

Abstract: BACKGROUND: Guidance from economic evaluations on which implementation strategies represent the best return on investment will be critical to advancing the Triple Aim of health care: improving patient care and population health while minimizing per-capita cost. The results of traditional (quantitative) economic evaluations are limited by a remaining "qualitative residual" of contextual information and stakeholders perspectives, which cannot be captured by monetary values alone and is particularly prevalent in implementation science research. The emergence of qualitative methods for economic evaluation offers a promising solution. MAIN BODY: To maximize the contributions of economic evaluations to implementation science, we recommend that researchers embrace a mixed-methods research agenda that merges traditional quantitative approaches with innovative, contextually grounded qualitative methods. Such studies are exceedingly rare at present. To assist implementation scientists in making use of mixed methods in this research context, we present an adapted taxonomy of mixed-method studies relevant to economic evaluation. We then illustrate the application of mixed methods in a recently completed cost-effectiveness evaluation, making use of an adapted version of reporting standards for economic evaluations. CONCLUSIONS: By incorporating qualitative methods, implementation researchers can enrich their economic evaluations with detailed, context-specific information that tells the full story of the costs and impacts of implementation. We end by providing suggestions for building a research agenda in mixed-method economic evaluation, along with more resources and training to support investigators who wish to answer our call to action

Forsbrand MH, Grahn B, Hill JC, Petersson IF, Post Sennehed C, and Stigmar K. Can the STarT Back Tool predict health-related quality of life and work ability after an acute/subacute episode with back or neck pain? A

psychometric validation study in primary care. BMJ Open. 2018; 8(12):e021748.

<https://doi.org/10.1136/bmjopen-2018-021748> [open access]

Abstract: OBJECTIVES: The predictive ability of the STarT Back Tool (SBT) has not yet been examined among acute/subacute back and/or neck pain in a primary care setting in respect to health-related quality of life (HRQoL) and work ability outcomes. The aim of this study was to evaluate the SBT's predictive validity for HRQoL and work ability outcomes at long-term follow-up in a population with acute/subacute back and/or neck pain. SETTING: Prospective data from 35 primary care centres in south Sweden during 2013. PARTICIPANTS: Patients (n=329) with acute/subacute back and/or neck pain, aged 18-67 years, not on sick leave or <60 days of sick leave completed the SBT when applying for physiotherapy treatment. Long-term follow-up measures (median 13 months, range 11-27 months) of HRQoL (EQ-5D) and work ability (Work Ability Score) was completed by 238 patients (72%). OUTCOMES: The predictive ability of the SBT for HRQoL and work ability outcomes was examined using Kruskal-Wallis test, logistic regression and area under the curve (AUC). RESULTS: Based on SBT risk group stratification, 103 (43%), 107 (45%) and 28 (12%) patients were considered as low, medium and at high risk, respectively. There were statistically significant differences in HRQoL ($p < 0.001$) and work ability ($p < 0.001$) at follow-up between all three SBT risk groups. Patients in the high risk group had a significantly increased risk of having poor HRQoL (OR 6.16, 95% CI 1.50 to 25.26) and poor work ability (OR 5.08, 95% CI 1.75 to 14.71) vs the low risk group at follow-up. The AUC was 0.73 (95% CI 0.61 to 0.84) for HRQoL and 0.68 (95% CI 0.61 to 0.76) for work ability. CONCLUSIONS: The SBT is an appropriate tool for identifying patients with a poor long-term HRQoL and/or work ability outcome in a population with acute/subacute back and/or neck pain, and maybe a useful adjunct to primary care physiotherapy assessment and practice. TRIAL REGISTRATION NUMBER: NCT02609750; Results

Goorts K, Vandebroek S, Rusu D, Bois MD, and Godderis L. Screening for the risk on long-term sickness absence. Journal of Public Health Research. 2018; 7(2):1419.

<https://doi.org/10.4081/jphr.2018.1419> [open access]

Abstract: Background: Long-term sickness absence is a growing concern in Belgium and other European countries. Since 2017, Belgian physicians of the sickness funding organisations are required to assess the re-integration possibilities within the first two months of sickness absence. Given the shortage of physicians in the assessment of work disability and the growing number of people in sickness absence, there is a need for a triage tool, allowing to assign return-to work support to patients having a high-risk profile not to resume work. Methods/design: The current study comprises a comprehensive validation process of a screening tool that supports Belgian physicians in guiding people back to work. The study consists of a theoretical construct validation (face validity

and content validity), and an empirical construct validation (concurrency validity, factorial validity, predictive validity, hypothesis testing validity and known- group validity). Expected impact of the study for Public Health: The screening instrument assessing the risk for long-term sickness absence is a tool developed to support physicians who work for sickness funds and for occupational health and safety organisations. Both professionals play an important role in the return to work process and the prevention of long-term sickness absence. The screening tool aims at making a distinction between people who will resume their work independently and people who will need support to do so. Generation of this prediction model will help physicians to focus effort and resources in the high-risk group. Results may also help understand the relationship between the biopsychosocial model and long-term sick-leave

Henderson B, Stuckey R, and Keegel T. Current and ceased users of sit stand workstations: a qualitative evaluation of ergonomics, safety and health factors within a workplace setting. BMC Public Health. 2018; 18(1):1374.

<https://doi.org/10.1186/s12889-018-6296-6> [open access]

Abstract: BACKGROUND: Many workplaces have implemented sit-stand workstations (SSW), which enable a worker to transition between sitting and standing as they perform their work activities. The factors which determine the initial adoption, sustainability or cessation of use for a SSW, remain largely unexamined. This study investigates the experiences of workers who had previously used or were currently using a SSW. METHODS: The study setting was within an Australian university. Participants who were current or past SSW users, as well as workplace key informants, were interviewed for the study. All interviews were recorded, transcribed and analysed. Transcripts were coded by two researchers for concepts and themes regarding uptake and sustainability of SSW. Discussion and validation of themes was undertaken by the team of three researchers. RESULTS: A total of 24 interviews were conducted. Twenty-two interviews were with ceased and current users (16 current and six ceased users) and two interviews were with workplace key informants. Analysis of the interviews with current and ceased users identified three main themes: Personal considerations for use/sustainability; Posture; and Usability. Analysis of the interviews with key informants identified two themes: Considerations and concerns and Policies and procedures. Little information was provided to workers when first using a SSW. Workers who were able to adopt their working style to the new workstations were able to sustain ongoing use of a SSW. Key informants were concerned that employees believed using a SSW would provide a health benefit in its own right without an understanding of the possible risks that might be associated with use. CONCLUSIONS: Sustainable usage of this type of SSW is achievable, however, it requires some element of adaptation at the individual worker level. Participants spoke about how the use of the SSW in a standing position was typically associated with the time of day, specific task selection and musculoskeletal comfort or fatigue factors. The provision of education to new

SSW users with relevant supporting information by a subject matter expert should enable the worker to obtain a more holistic understanding of the safety and health risks and benefits embedded in the use of a SSW

Jarden RJ, Sandham M, Siegert RJ, and Koziol-McLain J. Quality appraisal of workers' wellbeing measures: a systematic review protocol. *Systematic Reviews*. 2018; 7(1):240.

<https://doi.org/10.1186/s13643-018-0905-4> [open access]

Abstract: BACKGROUND: Measuring wellbeing has never been so important. With the rapid growth of workplace wellbeing interventions, determining their effectiveness is not only good science but also good practice. A wide variety of wellbeing measures exist in the literature but it is not always clear what they are measuring, nor which measures best meet study objectives. This study seeks to identify the most valid and reliable measure/s of workers' wellbeing. METHODS: Measures will be included if they were (1) designed for measuring workers' wellbeing and (2) available in English. We will use a three-staged electronic search strategy to identify studies that include measures that meet the inclusion criteria: (1) electronic bibliographic databases for published work, (2) reference lists of studies with included measures, and (3) the reference list of previously published reviews. The following electronic bibliographic databases will be searched: OVID: psycINFO, psycTESTS, Cochrane library, AMED, Health and Psychosocial instruments; PubMed; PubPsych; Europe PMC; Scopus and Google Scholar. Database key search terms will include [wellbeing OR "well-being"] AND [employee* OR worker* OR staff OR personnel], and a validated search filter will be applied for the measurement properties. The methodological quality of the included studies will be assessed and rated. Then, this quality assessment of the included studies will be considered in the quality assessment of the measurement instruments. Finally, recommendations for the most appropriate instrument to measure workers' wellbeing will be reported. DISCUSSION: This systematic review will evaluate the quality of instruments that measure workers' wellbeing. The findings of this review will improve clarity for researchers and clinicians in the appropriate instrument selection in the measurement of workers' wellbeing. SYSTEMATIC REVIEW REGISTRATION: PROSPERO CRD42018079044

van der Molen HF, Hulshof CT, and Kuijer PPF. How to improve the assessment of the impact of occupational diseases at a national level? The Netherlands as an example. *Occupational and Environmental Medicine*. 2019; 76(1):30-32.

<https://doi.org/10.1136/oemed-2018-105387> [open access]

Abstract: OBJECTIVE: To explore the impact of occupational diseases (ODs) through estimations of population attributable fractions (PAFs) in a national context. METHODS: PAFs were calculated for eight prevalent ODs using existing data on the prevalence of exposure to risk factors at work and the strength of their association with diseases based on systematic reviews. Six systematic

reviews with meta-analyses and two overview papers were selected. All addressed the relationship between occupational exposure to work-related risk factors for these eight prevalent ODs. Prevalence figures for exposure to work-related risk factors were retrieved from the Dutch National Working Conditions Survey (NWCS) based on self-reports by approximately 40 000 workers. The specific risk factors retrieved from the reviews were matched with the available and dichotomised self-reported exposure items from the NWCS by two authors. RESULTS: The eight frequently reported ODs among the Dutch working population revealed PAFs varying between 3% and 25%. Lateral epicondylitis and distress/burnout had the highest attributable fractions, with percentages of 25% and 18%, respectively. For knee osteoarthritis (13%), shoulder soft tissue disorders (10%) and non-specific low back pain (10%) approximately 1 in 10 cases were attributable to work. PAFs for irritant contact dermatitis, noise-induced hearing loss and chronic obstructive pulmonary disease were 15%, 6% and 3%, respectively. CONCLUSION: Data from systematic reviews and self-reported data on exposure provide opportunities to estimate the impact of ODs. For the Netherlands, they revealed substantial and varying attributions of work for prevalent diseases

van der Molen HF, de Vries S, and Sluiter JK. Occupational diseases among workers in lower and higher socioeconomic positions. *International Journal of Environmental Research and Public Health*. 2018; 15(12):E2849. <https://doi.org/10.3390/ijerph15122849> [open access]

Abstract: Background: To determine differences between workers in lower and higher socioeconomic positions (SEP) in incidences of occupational disease (OD) and incapacity for work due to ODs. Methods: From a Dutch dynamic prospective cohort of occupational physicians (OPs), ODs assessed by OPs were retrieved for lower and higher SEP groups. Results: Among the lower SEP, musculoskeletal disorders, and noise-induced hearing loss (NIHL) comprised two-thirds of the OD diagnoses. Among the higher SEP, stress/burnout comprised 60% of the OD diagnoses. Temporary and permanent incapacity for work due to work-related lower back disorders and repetitive strain injuries differed significantly between workers in lower compared to higher SEP. Conclusions: Occupational diseases occur at a 2.7 higher incidence rate for workers in lower SEP compared with higher SEP. Incapacity for work varies between the type of OD and the level of SEP

Munthe-Kaas H, Nokleby H, and Nguyen L. Systematic mapping of checklists for assessing transferability. *Systematic Reviews*. 2019; 8(1):22. <https://doi.org/10.1186/s13643-018-0893-4> [open access]

Abstract: BACKGROUND: Systematic reviews of research evidence have become an expected basis for decisions about practice guidelines and policy decisions in the health and welfare sectors. Review authors define inclusion criteria to help them determine which studies to search for and include in their reviews. However, these studies may still vary in the extent to which they reflect

the context of interest in the review question. While most review authors would agree that systematic reviews should be relevant and useful for decision makers, there appears to be few well known, if any, established methods for supporting review authors to assess the transferability of review findings to the context of interest in the review. With this systematic mapping and content analysis, we aim to identify whether there exists checklists to support review authors in considering transferability early in the systematic review process. The secondary aim was to develop a comprehensive list of factors that influence transferability as discussed in existing checklists. **METHODS:** We conducted a systematic mapping of checklists and performed a content analysis of the checklist criteria included in the identified checklists. In June 2016, we conducted a systematic search of eight databases to identify checklists to assess transferability of findings from primary or secondary research, without limitations related to publication type, status, language, or date. We also conducted a gray literature search and searched the EQUATOR repository of checklists for any relevant document. We used search terms such as modified versions of the terms "transferability," "applicability," "generalizability," etc. and "checklist," "guideline," "tool," "criteria," etc. We did not include papers that discussed transferability at a theoretical level or checklists to assess the transferability of guidelines to local contexts. **RESULTS:** Our search resulted in 11,752 titles which were screened independently by two review authors. The 101 articles which were considered potentially relevant were subsequently read by two authors, independently in full text and assessed for inclusion. We identified 31 relevant checklists. Six of these examined transferability of economic evaluations, and 25 examined transferability of primary or secondary research findings in health ($n = 23$) or social welfare ($n = 2$). The content analysis is based on the 25 health and social welfare checklists. We identified seven themes under which we grouped categories of checklist criteria: population, intervention, implementation context (immediate), comparison intervention, outcomes, environmental context, and researcher conduct. **CONCLUSIONS:** We identified a variety of checklists intended to support end users (researchers, review authors, practitioners, etc.) to assess transferability or related concepts. While four of these checklists are intended for use in systematic reviews of effectiveness, we found no checklists for qualitative evidence syntheses or for the field of social welfare practice or policy. Furthermore, none of the identified checklists for review authors included guidance to on how to assess transferability, or present assessments in a systematic review. The results of the content analysis can serve as the basis for developing a comprehensive list of factors to be used in an approach to support review authors in systematically and transparently considering transferability from the beginning of the review process

Pulakka A, Leskinen T, Koster A, Pentti J, Vahtera J, and Stenholm S. Daily physical activity patterns among aging workers: the Finnish Retirement and Aging Study (FIREA). Occupational and Environmental Medicine. 2019; 76(1):33-39.

<https://doi.org/10.1136/oemed-2018-105266>

Abstract: **OBJECTIVES:** Physical activity is associated with the aging workers' ability to work and predicts working beyond retirement age. To better understand physical activity behaviour in this growing population group, we aimed at characterising 24-hour physical activity patterns among aging workers, and to describe the association between occupational category and total, occupational and leisure-time physical activities. **METHODS:** We included 878 workers (mean age 62.4 years, SD 1.1, 85% women) from the Finnish Retirement and Aging Study, who wore an accelerometer on their non-dominant wrist for 1 week. We plotted mean hourly activity counts per minute (CPM) for working days and days off. We also compared mean daily CPM between genders and occupations between working days and days off, and work and leisure time by using repeated measures analysis of variance. **RESULTS:** Activity patterns were different between genders, occupations and types of the day. Women (2580, 95% CI 2540 to 2620) had higher daily mean CPM than men (2110, 95% CI 2020 to 2000). Women in manual occupations were more active than women in non-manual occupations during working days. The differences among men were in the same direction but less pronounced than among women. We found no differences in activity levels between occupations during days off and leisure time on working days. **CONCLUSIONS:** In aging workers, physical activity differs by gender and occupation during working time, but not during leisure time. As low physical activity is associated with increased risk of early exit from employment, physical activity should be promoted at workplaces, especially among men and people in non-manual occupations

Quirk H, Crank H, Carter A, Leahy H, and Copeland RJ. Barriers and facilitators to implementing workplace health and wellbeing services in the NHS from the perspective of senior leaders and wellbeing practitioners: a qualitative study. BMC Public Health. 2018; 18(1):1362.

<https://doi.org/10.1186/s12889-018-6283-y> [open access]

Abstract: **BACKGROUND:** The National Health Service (NHS) seems appropriately placed to be an exemplar employer in providing effective and proactive workplace health and wellbeing services for its staff. However, NHS staff sickness absence costs an estimated pound2.4 billion. Evidence suggests staff health and wellbeing services delivered in the NHS can improve health, productivity and sickness absence and yet the adoption of these services remains a challenge, with few examples nationally. This research aimed to explore the perceptions of NHS senior leaders and health and wellbeing practitioners regarding barriers and facilitators to implementing workplace health and wellbeing services for staff in the NHS. **METHODS:** Semi-structured interviews were conducted with NHS staff, consisting of four senior leaders, four heads of department and three health and wellbeing practitioners in one region of the UK. Interviews were transcribed verbatim and analysed using thematic analysis. **RESULTS:** Themes describe the experience of delivering workplace health and wellbeing services in the NHS, and barriers and facilitators to

implementation from senior decision makers. Barriers to implementation of services include; a busy and pressurised environment, financial constraints and reluctance to invest in staff health and wellbeing. Barriers to staff engagement were also reported and include difficulty of access to health and wellbeing services and lack of time. Initiating services were facilitated by financial incentives, a supportive organisational structure and culture that takes a preventative, rather than reactive, approach to staff health and wellbeing. Facilitators to implementing health and wellbeing services include a coherent, strategic approach to implementation, effective communication and advertisement, being creative and innovative with resources and conducting a needs analysis and evaluation before, during and after implementation.

CONCLUSIONS: Barriers to the successful initiation and implementation of health and wellbeing services in the NHS are numerous and range from front-line logistical issues with implementation to high-level strategic and financial constraints. Adopting a strategic and needs-led approach to implementation and ensuring thorough staff engagement are amongst a number of factors that facilitate implementation and help overcome barriers to initiation of wellbeing programmes in the NHS. There is a need for a culture that supports staff health and wellbeing in the NHS

Stochkendahl MJ, Nim CG, Boyle E, Larsen OK, Axen I, Kvammen OC, et al. Managing sickness absence of patients with musculoskeletal pain: a cross-sectional survey of Scandinavian chiropractors. *Chiropractic & Manual Therapies*. 2019; 27:1.

<https://doi.org/10.1186/s12998-018-0230-y> [open access]

Abstract: Background: Musculoskeletal pain is a major cause of work disability. Many patients with musculoskeletal pain seek care from health care providers other than their general practitioners, including a range of musculoskeletal practitioners. Therefore, these musculoskeletal practitioners may play a key role by engaging in sickness absence management and work disability prevention. This study aimed to determine the prevalence of musculoskeletal practitioners' practice behaviours, and their perceptions and beliefs about sickness absence management by using Scandinavian chiropractors as an example, as well as to examine the association between these characteristics and two different practice behaviours. Methods: As part of a mixed-methods study, we surveyed members of the national chiropractic associations in Denmark, Norway, and Sweden in 2016. Descriptive statistics were used to describe prevalence. Multilevel logistic regression with backwards stepping was used to estimate odds ratios with 95% confidence intervals between each of the two practice behaviours and the characteristics. Results: Out of the 802 respondents (response rate 56%), 372 were Danish, 349 Norwegian, and 81 Swedish. In Denmark and Norway, 38.7 and 37.8% always/often considered if sick leave was appropriate for their patient compared to 21.0% in Sweden ($p = 0.007$); and 86.5% of the Norwegian chiropractors always/often recommended to return-to-work versus 64.5 and 66.7% in Denmark and Sweden respectively ($p < 0.001$). In the final models,

factors associated with the two practice behaviours were age, level of clinical experience, working as a teacher, the tendency to be updated on current legislations and policies using social services, contact with general practitioners, relevance of engagement in SAM, consideration of workplace factors, SAM as part of the clinical tool box, patient out-of-pocket fee, and recommending fast return-to-work. Conclusions: Whilst not always engaged in sickness absence management with regards to musculoskeletal pain, chiropractors favour a 'return-to-work' rather than a 'stay-at-home' approach. Several practice behaviours and perceptions and beliefs are associated with these outcomes; however, system or organisational barriers are linked to clinician non-engagement

Varghese BM, Barnett AG, Hansen AL, Bi P, Hanson-Easey S, Heyworth JS, et al. The effects of ambient temperatures on the risk of work-related injuries and illnesses: evidence from Adelaide, Australia 2003-2013. *Environmental Research*. 2018; 170:101-109.

<https://doi.org/10.1016/j.envres.2018.12.024>

Abstract: BACKGROUND: The thermal environment can directly affect workers' occupational health and safety, and act as a contributing factor to injury or illness. However, the literature addressing risks posed by varying temperatures on work-related injuries and illnesses is limited. OBJECTIVES: To examine the occupational injury and illness risk profiles for hot and cold conditions. METHODS: Daily numbers of workers' compensation claims in Adelaide, South Australia from 2003 to 2013 (n=224,631) were sourced together with daily weather data. The impacts of maximum daily temperature on the risk of work-related injuries and illnesses was assessed using a time-stratified case-crossover study design combined with a distributed lag non-linear model. RESULTS: The minimum number of workers' compensation claims occurred when the maximum daily temperature was 25 degrees C. Compared with this optimal temperature, extremely hot temperatures (99th percentile) were associated with an increase in overall claims (RR: 1.30, 95%CI: 1.18-1.44) whereas a non-significant increase was observed with extremely cold temperatures (1st percentile, RR: 1.10 (95%CI: 0.99-1.21). Heat exposure had an acute effect on workers' injuries whereas cold conditions resulted in delayed effects. Moderate temperatures were associated with a greater injury burden than extreme temperatures. CONCLUSION: Days of very high temperatures were associated with the greatest risks of occupational injuries; whereas moderate temperatures, which occur more commonly, have the greatest burden. These findings suggest that the broader range of thermal conditions should be considered in workplace injury and illness prevention strategies

Al Zoubi F, Mayo N, Rochette A, and Thomas A. Applying modern measurement approaches to constructs relevant to evidence-based practice among Canadian physical and occupational therapists. *Implementation Science*. 2018; 13(1):152.

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Abstract: **BACKGROUND:** Evidence-based practice (EBP) is a complex process. To quantify it, one has to also consider individual and contextual factors using multiple measures. Modern measurement approaches are available to optimize the measurement of complex constructs. This study aimed to develop a robust measurement approach for constructs around EBP including practice, individual (e.g. knowledge, attitudes, confidence, behaviours), and contextual factors (e.g. resources). **METHODS:** One hundred eighty-one items arising from 5 validated EBP measures were subjected to an item analysis. Nominal group technique was used to arrive at a consensus about the content relevance of each item. Baseline questionnaire responses from a longitudinal study of the evolution of EBP in 128 new graduates of Canadian physical and occupational therapy programmes were analysed. Principles of Rasch Measurement Theory were applied to identify challenges with threshold ordering, item and person fit to the Rasch model, unidimensionality, local independence, and differential item functioning (DIF). **RESULTS:** The nominal group technique identified 70/181 items, and modified Delphi approach identified 68 items that fit a formative model (2 related EBP domains: self-use of EBP (9 items) and EBP activities (7 items)) or a reflective model (4 related EBP domains: attitudes towards EBP (17 items), self-efficacy (9 items), knowledge (11 items) and resources (15 items)). Rasch analysis provided a single score for reflective construct. Among attitudes items, 65% (11/17) fit the Rasch model, item difficulties ranged from - 7.51 to logits (least difficult) to + 5.04 logits (most difficult), and person separation index (PSI) = 0.63. Among self-efficacy items, 89% (8/9) fit the Rasch model, item difficulties ranged from - 3.70 to + 4.91, and PSI = 0.80. Among knowledge items, 82% (9/11) fit the Rasch model, item difficulties ranged from - 7.85 to 4.50, and PSI = 0.81. Among resources items, 87% (13/15) fit the Rasch model, item difficulties ranged from - 3.38 to 2.86, and PSI = 0.86. DIF occurred in 2 constructs: attitudes (1 by profession and 2 by language) and knowledge (1 by language and 2 by profession) arising from poor wording in the original version leading to poor translation. **CONCLUSIONS:** Rasch Measurement Theory was applied to develop a valid and reliable measure of EBP. Further modifications to the items can be done for subsequent waves of the survey

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