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

**\*Macpherson RA, He A, Amick III BC, Koehoorn M, and McLeod CB. Evaluating effectiveness of an integrated return-to-work and vocational rehabilitation program on work disability duration in the construction sector. *Scandinavian Journal of Work, Environment & Health*. 2022; 48(3):229-238.**

<https://doi.org/10.5271/sjweh.4006> [open access]

Abstract: OBJECTIVE: The aim of this study was to investigate whether an integrated return-to-work (RTW) and vocational rehabilitation (VR) program - the Work Reintegration (WR) program - was associated with reduced work disability duration in the construction sector in Ontario, Canada. METHODS: Workers' compensation data from the Ontario Workplace Safety and Insurance Board were extracted for lost-time construction worker claims following work-related injuries between 2009 and 2015. Claims receiving referrals to RTW and VR specialists (treatments) were matched with claims receiving no referrals (controls) during the periods before and after the WR program introduction. Multivariable difference-in-differences linear and quantile regression models were used to examine differences in cumulative disability days paid during two-years post-injury between treatment and control groups before and after the program change and the difference in these differences, overall, and at different disability distribution percentiles. RESULTS: The WR program introduction was associated with reductions in cumulative disability days paid for all claims but most notably among longer duration claims referred to RTW specialists (reduction of 274 days at the 90(th) percentile in the disability distribution) and shorter duration claims referred to VR specialists (reductions of 255 and 214 days at the 25(th) and 50(th) percentiles in the disability

distribution, respectively). CONCLUSIONS: The WR program introduction was effective in reducing cumulative disability days paid for construction worker claims but the effects varied at different percentiles in the disability distribution, as well as by specialist referral. The findings highlight the benefits of better integrated RTW and VR services to injured workers in the construction sector

**\*Sears JM, Edmonds AT, Hannon PA, Schulman BA, and Fulton-Kehoe D. Workplace wellness program interest and barriers among workers with work-related permanent impairments. Workplace Health & Safety. 2022; [epub ahead of print].**

<https://doi.org/10.1177/21650799221076872>

Abstract: BACKGROUND: Nearly half of U.S. workers have access to workplace wellness programs (WWPs), 58% of workers with access participate. The aim of this study was to assess interest in WWP participation and identify reasons for lack of interest among workers with work-related permanent impairments—a population at elevated risk of adverse health outcomes. METHODS: Workers who returned to work after a work-related permanent impairment were interviewed 11 to 15 months after workers' compensation claim closure. Qualitative content analysis methods were used to code open-ended responses. FINDINGS: Of 560 respondents, 51.4% expressed interest in WWP participation. Numerous adverse health and economic characteristics were associated with WWP interest, for example, interest was expressed by 63.3% of workers reporting fair/poor health status versus 47.1% reporting good/excellent; 56.9% of workers reporting moderate/severe pain versus 41.4% reporting mild/no pain; 64.7% of workers without health insurance versus 50.1% with health insurance; 69.0% of workers reporting depression versus 47.2% without depression; 70.4% of workers reporting obesity versus 48.0% without obesity; and 63.2% of workers often worried about expenses versus 46.9% reporting sometimes/never worried. Specific participation barriers were described by 34.2% of the 272 workers who were not interested. CONCLUSIONS/APPLICATIONS TO PRACTICE: A majority of workers with work-related permanent impairments—particularly those with adverse health and economic characteristics—were interested in WWPs. Many workers who reported no interest cited participation barriers. Further research is needed to determine whether addressing such barriers would enhance equitable access. Those undertaking WWP planning, implementation, and outreach should ensure that WWPs are inclusive and serve workers with disabilities

**Alif SM, Sim MR, Ho C, and Glass DC. Cancer and mortality in coal mine workers: a systematic review and meta-analysis. Occupational & Environmental Medicine. 2022; 79(5):347-357.**

<https://doi.org/10.1136/oemed-2021-107498>

Abstract: Coal mine workers are exposed to a number of workplace hazards which may increase the risk of cancer and mortality. We conducted a systematic review and meta-analysis to investigate cancer and mortality in coal mine workers. We searched in Ovid Medline, PubMed, Embase and Web of Science databases using keywords and text words

related to coal mines, cancer and mortality and identified 36 full-text articles using predefined inclusion criteria. Each study's quality was assessed using the Newcastle-Ottawa Scale. We performed random-effect meta-analyses including 21 of the identified articles evaluating cancer and/or mortality of coal mine workers. The meta-analysis showed an increased risk of all-cause mortality (SMR 1.14, 95% CI 1.00 to 1.30) and mortality from non-malignant respiratory disease (NMRD) (3.59, 95% CI 3.00 to 4.30) in cohorts with coal workers' pneumoconiosis (CWP). We found a somewhat increased risk of stomach cancer (1.11, 95% CI 0.97 to 1.35) and of mortality from NMRD (1.26, 95% CI 0.99 to 1.61) in the cohorts of coal miners with unknown CWP status. The meta-analysis also showed a decreased risk of prostate cancer and cardiovascular and cerebrovascular mortality among coal miners. This may be a result of the healthy worker effect and possible lower smoking rates, and perhaps also reflect the physically active nature of many jobs in coal mines. The meta-analysis for lung cancer did not show increased risk in coal miners with CWP (1.49, 95% CI 0.70 to 3.18) or for coal miners of unknown CWP status (1.03, 95% CI 0.91 to 1.18). Lower smoking rates in coal mine workers could explain why case-control studies where smoking was controlled for showed higher risks for lung cancer than were seen in cohort studies. Coal mine workers are at increased risk of mortality from NMRD but decreased risk of prostate cancer and cardiovascular and cerebrovascular mortality. Studies of coal mine workers need long-term follow-up to identify increased mortality and cancer incidence

**Andrade MA, Castro CSM, Batistao MV, Mininel VA, and Sato TO. Occupational profile, psychosocial aspects, and work ability of Brazilian workers during COVID-19 pandemic: IMPPAC cohort. *Safety and Health at Work*. 2022; 13(1):104-111.**

<https://doi.org/10.1016/j.shaw.2021.11.004> [open access]

**Abstract:** BACKGROUND: The IMPPAC cohort (Implications of the COVID-19 pandemic on psychosocial aspects and work ability among Brazilian workers) seeks to understand the impact of the pandemic on Brazilian workers. This article describes the occupational profile, psychosocial aspects, and work ability determined during the baseline and follow-up measurements of the cohort. METHODS: Workers were invited to participate through media advertisements, social networks, and e-mails. From June to September 2020, 1211 workers were included in the cohort. Follow-up measurements finished on October 2021 with 633 workers. Data were collected through standardized questionnaires using Google Forms. Psychosocial aspects were assessed using the COPSOQ II-Br. Work ability was assessed using the Work Ability Index (WAI). RESULTS: At baseline and follow-up, high proportion of workers were in the risk zone with regard to work pace, emotional work demands, influence on work, work-family conflict, burnout, and stress. Approximately 75% of the workers reported good to excellent work ability at baseline and follow-up. CONCLUSION: The occupational profile, psychosocial aspects, and work ability of Brazilian workers from the IMPPAC cohort were described. Psychosocial aspects and WAI were similar at baseline and follow-up

**Bijnsdorp FM, van der Beek AJ, Broese van Groenou MI, Proper KI, van den Heuvel SG, and Boot CR. Associations of combining paid work and family care with gender-specific differences in depressive symptoms among older workers and the role of work characteristics. *Scandinavian Journal of Work, Environment & Health*. 2022; 48(3):190-199. <https://doi.org/10.5271/sjweh.4014> [open access]**

Abstract: OBJECTIVES: This study aims to provide insight into (i) how the combination of paid work and family care is longitudinally associated with gender-related differences in depressive symptoms and (ii) the role of work characteristics in this association. METHODS: Data were derived from STREAM, a Dutch prospective cohort study of older workers aged 45-64 years. Respondents were included if they were employed in at least one measurement between 2015 and 2017 (N=12 447). Mixed-models were applied to disentangle between-person (BP) and within-person (WP) effects of family caregiving on depressive symptoms. Analyses were stratified by gender. Work characteristics (social support, autonomy, emotional and mental workload) were separately added to the multivariable models. RESULTS: For older employees, family caregiving was positively associated with depressive symptoms between and within persons for both women [BP B=0.80, 95% confidence interval (CI) 0.52-1.08; WP B=0.32, 95% CI 0.08-0.56] and men (BP B=0.75, 95% CI 0.45-1.05; WP B=0.25, 95% CI 0.01-0.48). Social support at work reduced the adverse effect of family care on depressive symptoms for women (BP) and men (BP and WP). Emotional workload partly explained the effect of family care for both women and men (BP). CONCLUSIONS: The longitudinal association between family care and mental health was similar for male and female employees. Resources at work (ie, social support) could protect caregiving employees against depressive symptoms. More research is needed regarding the relative impact of the care context compared to the work context of working family caregivers

**Cherry N, Beach J, and Galarneau JM. Ergonomic demands and fetal loss in women in welding and electrical trades: a Canadian cohort study. *American Journal of Industrial Medicine*. 2022; 65(5):371-381.**

<https://doi.org/10.1002/ajim.23336>

Abstract: Objectives: To determine the relationship between ergonomic demands of the job at conception and fetal loss (miscarriage or stillbirth). Methods: Women with a welding or electrical trade apprenticeship were identified across Canada for the Women's Health in Apprenticeship Trades-Metal and Electrical study. They completed a reproductive and employment history at recruitment and every 6 months for up to 5 years to provide details on pregnancies and work demands. Job at conception was identified and fetal loss examined in relation to ergonomic exposures/demands, allowing for potential confounders. Results: A total of 885 women were recruited; 447 in welding and 438 in electrical trades. Of these, 574 reported at least one pregnancy. Analysis of 756 pregnancies since the woman started in her trade suggested no increased risk of fetal loss in those choosing welding rather than electrical work. Among 506 pregnancies conceived during a period working in a trade, 148 (29.2%) ended in fetal loss: 31.2% (73/234) in welding, and 27.6% (75/272) in electrical work. Detailed

exposure information was available for 59% (299/506) of these pregnancies. In welders, the risk of fetal loss was increased with whole-body vibration (prevalence ratio [PR] = 2.14; 95% confidence interval [CI] 1.39-3.31) and hand-arm vibration for > 1 hour/day (PR = 2.15; 95% CI 1.33-3.49). In electrical workers risk increased with more than 8 days working without a rest day (PR = 2.29; 95% CI 1.25-4.17). Local exhaust ventilation reduced risk in welders. Conclusions: There was no significant increase in fetal loss in welding trades compared to electrical work. Vibration, largely from grinding, and extended work rotations appear to be potentially modifiable factors of some importance.

**Feletto E, Kovalevskiy EV, Schonfeld SJ, Moissonnier M, Olsson A, Kashanskiy SV, et al. Developing a company-specific job exposure matrix for the asbest chrysotile cohort study. Occupational & Environmental Medicine. 2022; 79(5):339-346.**

<https://doi.org/10.1136/oemed-2021-107438> [open access]

Abstract: OBJECTIVES: Exposure assessment for retrospective industrial cohorts are often hampered by limited availability of historical measurements. This study describes the development of company-specific job-exposure matrices (JEMs) based on measurements collected over five decades for a cohort study of 35 837 workers (Asbest Chrysotile Cohort Study) in the Russian Federation to estimate their cumulative exposure to chrysotile containing dust and fibres. METHODS: Almost 100 000 recorded stationary dust measurements were available from 1951-2001 (factories) and 1964-2001 (mine). Linear mixed models were used to extrapolate for years where measurements were not available or missing. Fibre concentrations were estimated using conversion factors based on side-by-side comparisons. Dust and fibre JEMs were developed and exposures were allocated by linking them to individual workers' detailed occupational histories. RESULTS: The cohort covered a total of 515 355 employment-years from 1930 to 2010. Of these individuals, 15% worked in jobs not considered professionally exposed to chrysotile. The median cumulative dust exposure was 26 mg/m<sup>3</sup> years for the entire cohort and 37.2 mg/m<sup>3</sup> years for those professionally exposed. Median cumulative fibre exposure was 16.4 fibre/cm<sup>3</sup> years for the entire cohort and 23.4 fibre/cm<sup>3</sup> years for those professionally exposed. Cumulative exposure was highly dependent on birth cohort and gender. Of those professionally exposed, women had higher cumulative exposures than men as they were more often employed in factories with higher exposure concentrations rather than in the mine. CONCLUSIONS: Unique company-specific JEMs were derived using a rich measurement database that overlapped with most employment-years of cohort members and will enable estimation of quantitative exposure-response

**Garza JL, Ferguson JM, Dugan AG, Decker RE, Laguerre RA, Suleiman AO, et al. Investigating the relationship between working time characteristics on musculoskeletal symptoms: a cross sectional study. Archives of Environmental & Occupational Health. 2022; 77(2):141-148.**

<https://doi.org/10.1080/19338244.2020.1860878>

Abstract: How working hours are organized can have a substantial effect on workers' health. Using a questionnaire and cross-sectional study design, we evaluated the relationship between working time characteristics, job demands, and health behaviors on musculoskeletal symptoms among 316 Department of Transportation (N = 174) and Department of Corrections (N = 142) workers. Low schedule control was associated with neck/shoulder musculoskeletal symptoms (prevalence ratio: 1.20, 95% confidence interval: 1.06-1.34,  $p < 0.01$ ), and working long (>48 hours per week) hours more frequently was associated with leg/foot musculoskeletal symptoms (prevalence ratio: 1.26 95% confidence interval: 1.06-1.50,  $p = 0.02$ ). Some working time characteristics were associated with musculoskeletal symptoms, and should be taken into consideration as part of interventions to prevent musculoskeletal disorders and promote health of workers.

**Guerin RJ, Glasgow RE, Tyler A, Rabin BA, and Huebschmann AG. Methods to improve the translation of evidence-based interventions: a primer on dissemination and implementation science for occupational safety and health researchers and practitioners. Safety Science. 2022; 152:105763.**

<https://doi.org/10.1016/j.ssci.2022.105763>

**Kakaraparthi VN, Vishwanathan K, Gadhavi B, Reddy RS, Tedla JS, Samuel PS, et al. Application of the rapid upper limb assessment tool to assess the level of ergonomic risk among health care professionals: a systematic review. Work. 2022; 71(3):551-564.**

<https://doi.org/10.3233/WOR-210239>

Abstract: BACKGROUND: Work-related musculoskeletal disorders (WMSDs) and ergonomic risk factors are widespread problems in the healthcare sector. OBJECTIVE: The primary objective of this review is to evaluate the application of the Rapid Upper Limb Assessment (RULA) tool in various healthcare professionals and to assess the level of ergonomic risk among them. METHODS: The databases MEDLINE, EMBASE, CINAHL, LILACS, SCIELO, DOAJ, PubMed, and PEDro were searched with terms associated with ergonomics, assessment, health care providers, risk factors, workplace, and RULA. We reviewed the literature from 2000 to 2020, including studies assessing RULA's effectiveness for evaluating the WMSD's and ergonomic risk in health care practitioners. We excluded the studies which were not open access and freely available. RESULTS: Overall, 757 records were screened; of these 40 potential studies, 13 different healthcare professionals were identified as eligible for inclusion. In most studies, the RULA tool was established as an effective tool in application and evaluating the level of the ergonomic risk among them. CONCLUSIONS: The RULA tool assessed the high ergonomic risk levels in dental professionals and low ergonomic risk levels

in professionals working in the pharmacy department, clearly suggesting potential changes in work postures were necessary to prevent or reduce these risk factors

**Kang D. Positive factors for return to work after accidents: health awareness, consultation with doctors, and personal characteristics of workers. *Safety and Health at Work*. 2022; 13(1):32-39.**

<https://doi.org/10.1016/j.shaw.2021.10.001> [open access]

**Abstract:** Background Industrial accidents can determine the overall level and quality of the work environment in industries and companies that contribute to national economic development. Korea has transformed the country from an international aid recipient to a donor country, but it has ranked first among the Organisation for Economic Co-operation and Development-member countries in the number of fatal industrial accidents. Little has been known about the policy effects in terms of the workers' insurance for their industrial accidents and rehabilitation. This study raises two research questions about the influence of workers' personal characteristics and vocational rehabilitation services on their return to workplaces. **Methods** The study implements weighted logistic regression analysis using propensity score matching. This research utilizes the relevant dataset (3,924 persons) of Korea's industrial accident and insurance. **Results** The findings show that the level of workers' awareness of health recovery and their counseling for rehabilitation by physicians had positive effects on their return to work. Environmental factors such as workers' job stability at the time of industrial accidents and the temporal effects of industrial accidents (e.g., the level of disability, their age) had negative impacts on their return to work. **Conclusions** These findings have policy implications that the concentration of rehabilitation services for patients who have been mildly affected by industrial accidents would be effective in the short and medium term. The findings also highlight the necessity of ongoing policies about workers' vocational recovery with concrete evidence about policy impacts

**Kinnunen PM, Matomaki A, Verkola M, Heikinheimo A, Vapalahti O, Kallio-kokko H, et al. Veterinarians as a risk group for zoonoses: exposure, knowledge and protective practices in Finland. *Safety and Health at Work*. 2022; 13(1):78-85.**

<https://doi.org/10.1016/j.shaw.2021.10.008> [open access]

**Abstract:** Background Veterinarians may encounter a variety of zoonotic pathogens in their work. **Methods** We conducted two cross-sectional questionnaire studies among veterinarians in Finland. Participants were recruited during two Annual Veterinary Congresses. In 2009, 306 veterinarians participated in an extensive questionnaire study, and in 2016, 262 veterinarians participated in a more focused study that included two same questions. **Results** In 2009, the majority (90.9%) of the participating veterinarians reported having been occupationally exposed to zoonotic pathogens. Zoonotic infections (15.0%), needle stick incidents (78.8%), bites (85.0%), as well as infected skin lesions (24.2%) were reported. In 2009, 8.2% of the participants fully agreed with the statement "I have good knowledge of zoonoses and their prevention"; in 2016, the proportion was 10.3%. The reported use of protective practices and

personal protective equipment in connection with specific veterinary procedures indicated that there was room for improvement, particularly in protection from pathogens that are transmissible via inhalation and mucous membranes. Conclusion

The results confirm that veterinarians are commonly occupationally exposed to zoonotic pathogens. Education should aim to improve and maintain the knowledge of zoonoses and their prevention. Use of protective practices should be advocated.

**Manning Hutson M, Hosking SM, Mantalvanos S, Berk M, Pasco J, and Dunning T. What injured workers with complex claims look for in online communities: netnographic analysis. *Journal of Medical Internet Research*. 2022; 24(4):e17180.**

<https://doi.org/10.2196/17180> [open access]

Abstract: BACKGROUND: Improved understanding of social constructs around injury may help insurance case managers to understand how best to support people after injury. OBJECTIVE: This study sought to explore what people who sustain work-related injuries may seek from online communities. The study highlights potential opportunities for improved engagement with insurance case management practice. METHODS: An observational netnographic analysis was undertaken on anonymous, publicly available messages posted on Australian message boards. All research data were drawn from anonymous, online communities. A person (author SM) with experience of making a claim through an Australian workers' compensation system and online engagement was involved in study conception, design, and analysis. Data were analyzed using NVivo12 in an iterative, multistage process including coding, journaling, and member checking. A total of 141 people were engaged in discussion across 47 threads housed on 4 Australian forums. RESULTS: In this qualitative study, themes emerged from the data, describing how injured workers use online communities to help make decisions, get support, and solve problems. The key motivators for action and engagement were seeking information, connection, or justice. Establishment of relationships was a key mediator of each of these parameters. CONCLUSIONS: Some work-related injuries may involve medical and medicolegal complexity as well as changed lifestyle and routine during convalescence and recovery. The mechanism used by some injured workers to seek information and problem solve suggests a capacity for self-management and self-care after work-related injury. Netnography provides information on a community that may not regularly engage with research because of the complexity of their situation and their vulnerability

**Norasi H, Tetteh E, Sarker P, Mirka GA, and Hallbeck MS. Exploring the relationship between neck flexion and neck problems in occupational populations: a systematic review of the literature. *Ergonomics*. 2022; 65(4):587-603.**

<https://doi.org/10.1080/00140139.2021.1976847>

Abstract: A systematic review was conducted to evaluate the relationship between occupational neck flexion angles and neck problems. The synthesised findings were used to answer three research questions: (1) Is there a positive/negative relationship between neck



flexion and neck problems? (2) What is the appropriate angular threshold for neck flexion as a risk factor for neck problems? (3) What are the gaps in our current knowledge? A review of 21 papers revealed (1) a consistent positive correlation between neck flexion and neck problems, and (2) a neck flexion angle of 20° as the most evidence-based (not necessarily the best) cut-off angle separating high- and low-risk neck flexion postures. Future research should focus on the (1) continuous collection of three-dimensional neck postures through longitudinal studies to quantify cumulative exposures of neck postures, and (2) development of standard descriptions of 'neck problems' and 'neck flexion' to facilitate the development of a dose-response relationship. Practitioner summary: Practitioners depend on thresholds for evaluating neck postural exposure using work assessment tools; however, the scientific basis for this is unclear. This systematic review investigated the angular threshold for neck flexion and found 20° of neck flexion with the greatest evidence-based support as the threshold for high-risk neck postural exposure.

**Roczniewska M, Smoktunowicz E, Calcagni CC, von Thiele Schwarz U, Hasson H, and Richter A. Beyond the individual: a systematic review of the effects of unit-level demands and resources on employee productivity, health, and well-being. *Journal of Occupational Health Psychology*. 2022; 27(2):240-257.**

<https://doi.org/10.1037/ocp0000311>

Abstract: Creating sustainable employment—that is, a condition in which employees remain productive but also enjoy good health and well-being—is a challenge for many organizations. Work environment factors are major contributors to these employee outcomes. The job demands-resources model categorizes work environment factors into demands versus resources, which are, respectively, detrimental versus beneficial to employee outcomes. Although conceptualized as workplace factors, these job characteristics have been studied mostly at an individual level. Therefore, their roles at the supra-individual level (i.e., any work-unit level above an individual, such as group or organization) for employee productivity, health, and well-being remains unclear. The aim of this systematic review is to synthesize evidence concerning job resources and job demands at the supra-individual level and their relationships to productivity, health, and work-related well-being. The review covers articles published through December 2018. In total, 202 papers met the inclusion criteria. We found stronger support for the beneficial roles of supra-individual job resources than for the detrimental roles of job demands for productivity and work-related well-being. Regarding health, most of the relationships were found to be nonsignificant. To conclude, this review demonstrates that, at the supra-individual level, the motivational path has received more support than the health impairment path. Based on these findings, we provide recommendations for further research and practice. (PsycInfo Database Record (c) 2022 APA, all rights reserved)

**Sarfraz M, Hafeez H, Abdullah MI, Ivascu L, and Ozturk I. The effects of the COVID-19 pandemic on healthcare workers' psychological and mental health: the moderating role of felt obligation. *Work*. 2022; 71(3):539-550.**

<https://doi.org/10.3233/WOR-211073>

**Abstract:** BACKGROUND: The ravages of COVID-19 have created a worldwide emergency in healthcare units. Under these circumstances, the perception of an infection threat is primarily affecting the employees' performance in reducing contagion effects. OBJECTIVE: The purpose of this study is to develop substantial measures of support for healthcare employees to maintain adequacy in job performance. METHODS: Data were collected from state-owned hospitals in Pakistan to test the current study's proposed model. We applied structural equation modeling through a partial least square regression in addition to the blindfolding approach in Smart-PLS. Confirmatory factor analysis was also employed to measure the study's validity. RESULTS: The current study's findings show that the perception of a threat from COVID-19 and the inadequate protective measures have influenced frontline healthcare workers' performance levels. The mediating path of depression symptoms indicated the threat of COVID-19 and the absence of protective measures as potential determinants of poor performance. However, an employee's ability to feel obligated toward their job duties reduces the effect of depression on employee performance. CONCLUSION: The current model highlights an individual's feelings of obligation to maintain their performance level by minimizing the effect of depression and professional anxiety. The present study extensively described the psychological constraints healthcare workers are facing during the current pandemic. Current research addressing healthcare employees' mental health is vital for better prevention and control during pandemic circumstances. The current study's findings extend the emerging understanding of employee psychology in such circumstances

**Shifrin NV and Michel JS. Flexible work arrangements and employee health: a meta-analytic review. *Work and Stress*. 2022; 36(1):60-85.**

<https://doi.org/10.1080/02678373.2021.1936287>

**Vosoughi S, Alimohammadi I, Hosseini AF, and Sedghi Noushabadi Z. Relationship between risk perception toward hearing conservation and using hearing protection devices among offset printing workers in Tehran province, Iran. *Archives of Environmental & Occupational Health*. 2022; 77(4):338-344.**

<https://doi.org/10.1080/19338244.2021.1893630>

**Abstract:** The way workers perceive noise exposure can play an important role in the adoption of safety behaviors. Therefore, the determination of the relationship among risk awareness, behavior, and exposure can be an extremely important issue in controlling noise exposure. The aim of this study was to investigate the association between risk perception and practice of workers. Workers from 16 printing houses in Tehran province participated in present study. A questionnaire was used for determining the level of risk perception and

practice about hearing conservation. The results revealed a significant relationship between risk perception and safety behavior adoption ( $P < 0.001$ ). A positive and significant correlation was found between these two variables ( $P < 0.001$ ;  $r_s = 0.912$ ). Also, the results showed that workers with hearing impairment had a better practice. In addition, attention should be paid to preventive principles and encouragement of hearing protection devices usage among employees.

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