

IWH Research Alert
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***Ferron EM, Kosny A, and Tonima S. Workplace violence prevention: flagging practices and challenges in hospitals. *Workplace Health & Safety*. 2021; [epub ahead of print]. <https://doi.org/10.1177/21650799211016903>**

Abstract: BACKGROUND: Flagging is a standardized way to communicate the risk of patient violence to workers. We add to the limited body of research on flagging by describing hospitals' approaches to and challenges with flagging patients with a history of violent behavior. METHODS: We used a qualitative case study approach of hospitals in Ontario, Canada and their patient flagging practices. Key informants and our advisory committee identified 11 hospitals to invite to participate. Hospitals assisted in recruiting frontline clinical and allied health workers and managers to an interview or focus group. A document analysis of hospitals' flagging policies and related documents was conducted. Thematic analysis was used to analyze interview and focus group data. FINDINGS: Five hospitals participated. Of the five hospitals, four had a flagging policy where frontline clinical workers (n = 58), frontline allied health workers (n = 31), and managers (n = 42) participated in an interview (n = 43) or focus group (n = 15). Participants described three challenges: patient stigmatization, patient privacy, and gaps in policy



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and procedures. **CONCLUSION/APPLICATION TO PRACTICE:** Flagging patients with a history of violent behavior is one intervention that hospitals use to keep workers safe. While violence prevention was important to study participants, a number of factors can affect implementation of a flagging policy. Study findings suggest that hospital leadership should mitigate patient stigmatization (real and perceived) and perception of patient rights infringement by educating all managers and frontline workers on the purpose of flagging and the relationship between occupational health and safety and privacy regulations. Leadership should also actively involve frontline workers who are the most knowledgeable about how policies work in practice

***Sears JM, Edmonds AT, MacEachen E, and Fulton-Kehoe D. Appraisal of Washington State workers' compensation-based return-to-work programs and suggested system improvements: a survey of workers with permanent impairments. American Journal of Industrial Medicine. 2021; [epub ahead of print].**

<https://doi.org/10.1002/ajim.23289>

Abstract: **BACKGROUND:** Following a work-related permanent impairment, injured workers commonly face barriers to safe and successful return to work (RTW). Examining workers' experiences with the workers' compensation (WC) system could highlight opportunities to improve RTW outcomes. Objectives included summarizing workers': (1) appraisal of several WC-based RTW programs, and (2) suggestions for vocational rehabilitation and WC system improvements to promote safe and sustained RTW. **METHODS:** In telephone interviews, 582 Washington State workers with work-related permanent impairments were asked whether participation in specified WC-based RTW programs helped them RTW and/or stay at work. Suggestions for program and system improvements were solicited using open-ended questions; qualitative content analysis methods were used to inductively code responses. **RESULTS:** Most respondents reported positive impacts from RTW program participation; for example, 62.5% of vocational rehabilitation participants reported it helped them RTW, and 51.7% reported it helped them stay at work. Among 582 respondents, 28.0% reported that no change was needed to the WC system, while 57.6% provided suggestions or critiques. Reduce delays/simplify process/improve efficiency was the most frequent WC system theme-mentioned by



34.9%. Among 120 vocational rehabilitation participants, 35.8% reported that no change was needed to vocational rehabilitation, while 46.7% (N=56) provided suggestions or critiques. More worker choice/input into the vocational retraining plan was the most frequent vocational rehabilitation theme-mentioned by 33.9%.

CONCLUSIONS: This study's findings suggest that there is substantial room for improvement in workers' experience with the WC system. In addition, injured workers' feedback may reflect opportunities to reduce administrative burden and to improve worker health and RTW outcomes

Braun BI, Hafiz H, Singh S, and Khan MM. Health care worker violent deaths in the workplace: a summary of cases from the national violent death reporting system. Workplace Health & Safety. 2021; 69(9):435-441.

<https://doi.org/10.1177/21650799211003824>

Abstract: **BACKGROUND:** Violent workplace deaths among health care workers (HCWs) remain understudied in the extant literature despite the potential for serious long-term implications for staff and patient safety. This descriptive study summarized the number and types of HCWs who experienced violent deaths while at work, including the location in which the fatal injury occurred. **METHODS:** Cases were identified from the Centers for Disease Control and Prevention's National Violent Death Reporting System between 2003 and 2016. Coded variables included type of HCW injured, type of facility, and location within the facility and perpetrator type among homicides. Frequencies were calculated using Excel. **FINDINGS:** Among 61 HCW deaths, 32 (52%) were suicides and 21 (34%) were homicides; eight (13%) were of undetermined intent. The occupations of victims included physicians (28%), followed by nurses (21%), administration/support operations (21%), security and support services (16%), and therapists and technicians (13%). Most deaths occurred in hospitals (46%) and nonresidential treatment services (20%). Within facility, locations included offices/clinics (20%) and wards/units (18%). Among homicide perpetrators, both Type II (perpetrator was client/patient/family member) and Type IV (personal relationship to perpetrator) were equally common (33%).

CONCLUSION/ APPLICATIONS TO PRACTICE: Suicide was more common than homicide among HCW fatal injuries. Workplace



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violence prevention programs may want to consider both types of injuries. Although fatal HCW injuries are rare, planning for all types of violent deaths could help minimize consequences for staff, patients, and visitors

Coifman KG, Disabato DD, Seah THS, Ostrowski-Delahanty S, Palmieri PA, Delahanty DL, et al. Boosting positive mood in medical and emergency personnel during the COVID-19 pandemic: preliminary evidence of efficacy, feasibility and acceptability of a novel online ambulatory intervention. Occupational and Environmental Medicine. 2021; 78:555-557. <https://doi.org/10.1136/oemed-2021-107427>

Abstract: Objectives: The aim of this project was to test the efficacy of a brief and novel online ambulatory intervention aimed at supporting psychological health and well-being for medical personnel and first responders during the COVID-19 pandemic. Methods: Interested participants, n=28, actively employed as medical personnel, support staff and emergency responders, in the Midwestern USA in May-June of 2020, provided informed consent and were randomised to complete either low-dose or high-dose intervention, one time daily for 1 week via smartphone application. Each daily intervention included expressive writing, adaptive emotion regulation activity and (one vs two) positive emotion-generation activities, lasting 3-6 min a day. Ratings of negative and positive emotion were provided before and after each activity daily. Analyses tested compliance, acceptability, as well as efficacy at increasing positive emotion and decreasing negative emotion with each use and across time. Results: The results indicated a 13% increase in positive emotion, $t(25)=2.01$, $p=0.056$; and decrease in negative emotion by 44%, $t(25)=-4.00$, $p=0.001$ across both doses. However, there was a clear advantage for individuals in the high-dose condition as daily boosts in positive emotion were significantly greater (an additional 9.4%) $B=0.47$, $p=0.018$. Overall, compliance was good. Acceptability ratings were good for those who completed the follow-up assessment. Conclusion: Front-line personnel, including medical staff and emergency responders, are experiencing unprecedented psychological stress during the COVID-19 pandemic. This investigation suggests both feasibility and efficacy for a brief, daily, ambulatory intervention which



could provide essential psychological support to individuals at risk in the workplace.

Coutu MF, Gaudreault N, Major ME, Nastasia I, Dumais R, Deshaies A, et al. Return to work following total knee arthroplasty: a multiple case study of stakeholder perspectives. Clinical Rehabilitation. 2021; 35(6):920-934.

<https://doi.org/10.1177/0269215520984319>

Abstract: Objective: The study's aim was to gain insights into factors influencing sustainable return to work following total knee arthroplasty (TKA). Design: A descriptive multiple-case design was used. A case was defined as a worker's following TKA work disability situation. Settings: The cases came from public hospitals in urban and semi-urban areas in Quebec (Canada) and involved mostly non-work-related TKAs. Subjects: Workers had to be between 6 and 12 months post-TKA, have physical/manual jobs and currently employed. Their rehabilitation professionals and workplace representatives (employer and/or union) were also recruited, based on the work disability paradigm. Main measures: Semi-structured interviews, questionnaires on pain, physical work demands (workers only), and observation of the work activities of those workers back at work were used. Cases were compared and categorized for worker-perceived levels of difficulty in returning to or staying at work: little or no difficulty (n = 8); some difficulty (n = 5); not back at work due to excessive difficulty with their knee (n = 4). Results: A total of 17 cases were constituted. In only one case, the worker benefitted from an interdisciplinary work rehabilitation approach. Results highlight the interplay among these factors: (1) the workers' perceptions of their residual symptoms and ability to manage them, (2) the interaction between work adjustments and tools offered by the employers and the workers' own strategies, and (3) perceptions of the workers' physical capacities. Conclusion: Workers' who face high levels of work demands/difficulties and who have limited access to work adjustments and tools should be referred for work rehabilitation.

Gonzalez Garcia MN, Segarra Canameres M, Villena Escribano BM, and Romero Barriuso A. Constructions health and safety plan: the leading role of the main preventive management document on construction sites. Safety Science. 2021;



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143:105437.

<https://doi.org/10.1016/j.ssci.2021.105437>

Govaerts R, Tassignon B, Ghillebert J, Serrien B, De Bock S, Ampe T, et al. Prevalence and incidence of work-related musculoskeletal disorders in secondary industries of 21st century Europe: a systematic review and meta-analysis. BMC Musculoskeletal Disorders. 2021; 22(1):751.

<https://doi.org/10.1186/s12891-021-04615-9> [open access]

Abstract: OBJECTIVE: Over the course of the twenty-first century, work-related musculoskeletal disorders are still persisting among blue collar workers. At present, no epidemiological overview exists.

Therefore, a systematic review and meta-analysis was performed on the epidemiology of work-related musculoskeletal disorders (WMSD) within Europe's secondary industries. METHODS: Five databases were screened, yielding 34 studies for the qualitative analysis and 17 for the quantitative analysis. Twelve subgroups of WMSDs were obtained for the meta-analysis by means of predefined inclusion criteria: back (overall), upper back, lower back, neck, shoulder, neck/shoulder, elbow, wrist/hand, leg (overall), hip, knee, and ankle/feet. RESULTS: The most prevalent WMSDs were located at the back (overall), shoulder/neck, neck, shoulder, lower back and wrist WMSDs with mean 12-month prevalence values of 60, 54, 51, 50, 47, and 42%, respectively. The food industry was in the majority of subgroups the most prominent researched sector and was frequently associated with high prevalence values of WMSDs.

Incidence ratios of upper limb WMSDs ranged between 0.04 and 0.26. Incidence ratios could not be calculated for other anatomical regions due to the lack of sufficient articles. CONCLUSION: WMSDs are still highly present among blue collar workers. Relatively high prevalence values and low incidence ratios indicate a limited onset of WMSDs with however long-term complaints

Ji Y, Wang D, and Riedl M. Analysis of the correlation between occupational stress and mental health of primary and secondary school teachers. Work. 2021; 69(2):599-611.

<https://doi.org/10.3233/WOR-213502>

Abstract: Background: With the rapid advancement of the educational reform, the requirements for primary and secondary school teachers



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are increasing, which makes the work pressure of teachers become greater, which can lead to a variety of mental health problems. It is the primary task to promote the psychological health of primary and secondary school teachers by analyzing the stress of teachers and putting forward reasonable countermeasures. Objective: The study aimed to analyze the direct and indirect effects of occupational stress on the mental health level of primary and secondary school teachers. Methods: 317 teachers from 6 rural primary and secondary schools in Zhejiang province were selected as research subjects. A questionnaire was designed to collect information of occupational stress, mental health, and social support scores. The teachers were compared for differences in gender, marriage status, class teacher, occupational stress, and mental health. The correlation among occupational stress, mental health, and social support was analyzed by structural equation model. Results: The occupational stress of male teachers was higher than that of female teachers in self-development, work load, and career expectation, and the mental health was lower than that of female teachers in work ($P < 0.05$). The occupational stress of married teachers was significantly higher than that of unmarried teachers, and their mental health was significantly higher than that of unmarried teachers ($P < 0.05$). The occupational stress of teachers with senior professional titles was lower than that of teachers with primary and intermediate titles in the dimensions of self-development, work load, and career expectation ($P < 0.05$). The occupational stress of class teachers was higher than that of non-class teachers in terms of student factors, work load, and career expectation ($P < 0.05$). The direct path coefficient between occupational stress and mental health was -0.421, and the indirect path coefficient between occupational stress and mental health was -0.172. Conclusions: The occupational stress of male, married, class teacher, and teacher with the primary and intermediate titles was significantly greater than that of female, unmarried, non-class teacher, and senior title teacher. In conclusion, the occupational stress of primary and secondary school teachers can not only directly predict the mental health level, but also indirectly affect the mental health level through social support.

Matre D, Skogstad M, Sterud T, Nordby KC, Knardahl S, Christensen JO, et al. Safety incidents associated with extended



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working hours. A systematic review and meta-analysis. Scandinavian Journal of Work, Environment & Health. 2021; 47(6):415-424.

<https://doi.org/10.5271/sjweh.3958> [open access]

Abstract: OBJECTIVE: We performed a systematic review to assess potential consequences of extended working hours on accidents, near-accidents, safety incidents and injuries (incidents) by considering the overall certainty of evidence. METHODS: We searched five databases systematically (Medline, Embase, PsycINFO, Web of Science, and Proquest Health and safety Science Abstract) and identified 10072 studies published until December 2020. Twenty-two studies met the inclusion criteria. We followed a systematic approach to evaluate risk of bias and synthesize results in a meta-analysis. The certainty of evidence was determined by a modified version of The Grading of Recommendations Assessment, Development and Evaluation (GRADE). RESULTS: Our analyses indicated an association between working >12 hours/day (RR: 1.24, 95%CI: 1.11, 1.40), or working >55 hours/week (RR: 1.24, 95%CI: 0.98, 1.57), and elevated risk of incidents. The certainty of evidence evaluated as low. Weak or no associations were observed for other exposure contrasts: working >8 hours/day (RR: 0.93, 95%CI: 0.72, 1.19), or working overtime (RR: 1.08, 95%CI: 0.75, 1.55), working 41-48 hours/week (RR: 1.02, 95%CI: 0.92, 1.13) or 49-54 hours/week (RR: 1.02, 95%CI: 0.97, 1.07). The certainty of evidence was evaluated as low (very low for 41-48 hours/week). CONCLUSIONS: Daily working hours >12 hours and weekly working hours exceeding 55 hours was associated and increased risk of incidents. The level of evidence was low. Hence, further high-quality research is warranted to elucidate these associations

Mendez Rivero F, Padrosa E, Utzet M, Benach J, and Julia M. Precarious employment, psychosocial risk factors and poor mental health: a cross-sectional mediation analysis. Safety Science. 2021; 143:105439.

<https://doi.org/10.1016/j.ssci.2021.105439>

Rabal-Pelay J, Cimarras-Otal C, Macia-Calvo M, Laguna-Miranda C, and Bataller-Cervero AV. Use of a spinal traction device during work shift in assembly line workers. International Journal



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of Environmental Research and Public Health. 2021; 18(14):7708.
<https://doi.org/10.3390/ijerph18147708> [open access]

Abstract: Increasing back discomfort and spinal shrinkage during the workday is a problem that affects assembly line workers. The aim of this research was to analyze the effect of a spinal traction system on discomfort, spinal shrinkage, and spinal sagittal alignment in assembly line workers, who are in prolonged standing conditions during a workday. A total of 16 asymptomatic males were recruited to assess spinal shrinkage, spinal sagittal alignment, and back discomfort during the workday. The measurement was carried out in two days of work, a normal day, and the other using a spinal traction device utilized in two breaks during the workday. Assembly line workers lost height significantly on both control and intervention days. No differences were found between days. No changes were found in spinal sagittal alignment on the control day. Lumbar lordosis angle increased significantly at the end of the intervention day. The use of a spinal traction device during the workday in two breaks time did not significantly reduce the spinal shrinkage of healthy workers. Lumbar lordosis angle increased significantly at the end of the spinal traction intervention day. Prospective studies would be necessary to clarify the possible benefits of the traction device

Samiee F and Naghavi A. Vocational rehabilitation resources from the perspective of people with spinal cord injury and service providers. Journal of Vocational Rehabilitation. 2021; 55(1):61-71.

<https://doi.org/10.3233/JVR-211146>

Snowdon AW and Saunders M. COVID-19, workforce autonomy and the health supply chain. Healthcare Quarterly. 2021; 24(2):15-26.

<https://doi.org/10.12927/hcq.2021.26551>

Abstract: During the COVID-19 pandemic, the rapid surge in demand for critical supplies and public health efforts needed to guard against virus transmission have placed enormous pressure on health systems worldwide. These pressures and the uncertainty they have created have impacted the health workforce in a substantial way. This paper examines the relationship between health supply chain capacity and the impact of the COVID-19 pandemic on Canada's



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health workforce. The findings of this research also highlight the impact of the pandemic on health workers, specifically the relationship between the health supply chain and the autonomy of the health workforce

Standal MI, Aasdahl L, Jensen C, Foldal VS, Hagen R, Fors EA, et al. Subgroups of long-term sick-listed based on prognostic return to work factors across diagnoses: a cross-sectional latent class analysis. Journal of Occupational Rehabilitation. 2021; 31(2):383-392.

<https://doi.org/10.1007/s10926-020-09928-5> [open access]

Abstract: Comorbidity is common among long-term sick-listed and many prognostic factors for return to work (RTW) are shared across diagnoses. RTW interventions have small effects, possibly due to being averaged across heterogeneous samples. Identifying subgroups based on prognostic RTW factors independent of diagnoses might help stratify interventions. The aim of this study was to identify and describe subgroups of long-term sick-listed workers, independent of diagnoses, based on prognostic factors for RTW. Latent class analysis of 532 workers sick-listed for eight weeks was used to identify subgroups based on seven prognostic RTW factors (self-reported health, anxiety and depressive symptoms, pain, self-efficacy, work ability, RTW expectations) and four covariates (age, gender, education, physical work). Four classes were identified: Class 1 (45% of participants) was characterized by favorable scores on the prognostic factors; Class 2 (22%) by high anxiety and depressive symptoms, younger age and higher education; Class 3 (16%) by overall poor scores including high pain levels; Class 4 (17%) by physical work and lack of workplace adjustments. Class 2 included more individuals with a psychological diagnosis, while diagnoses were distributed more proportionate to the sample in the other classes. The identified classes illustrate common subgroups of RTW prognosis among long-term sick-listed individuals largely independent of diagnosis. These classes could in the future assist RTW services to provide appropriate type and extent of follow-up, however more research is needed to validate the class structure and examine how these classes predict outcomes and respond to interventions



Tikka C, Verbeek J, Ijaz S, Hoving JL, Boschman J, Hulshof C, et al. Quality of reporting and risk of bias: a review of randomised trials in occupational health. Occupational and Environmental Medicine. 2021; 78(9):691-696.

<https://doi.org/10.1136/oemed-2020-107038> [open access]

Abstract: Objectives: To assess the reporting quality of randomisation and allocation methods in occupational health and safety (OHS) trials in relation to Consolidated Standards of Reporting Trials (CONSORT) requirements of journals, risk of bias (RoB) and publication year.

Methods: We systematically searched for randomised controlled trials (RCTs) in PubMed between 2010 and May 2019 in 18 OHS journals. We measured reporting quality as percentage compliance with the CONSORT 2010 checklist (items 8-10) and RoB with the ROB V.2.0 tool (first domain). We tested the mean difference (MD) in % in reporting quality between CONSORT-requiring and non-requiring journals, trials with low, some concern and high RoB and publications before and after 2015. **Results:** In 135 articles reporting on 129 RCTs, average reporting quality was at 37.4% compliance (95% CI 31.9% to 43.0%), with 10% of articles reaching 100% compliance. Reporting quality was significantly better in CONSORT-requiring journals than non-requiring journals (MD 31.0% (95% CI 21.4% to 40.7%)), for studies at low RoB than high RoB (MD 33.1% (95% CI 16.1% to 50.2%)) and with RoB of some concern (MD 39.8% (95% CI 30.0% to 49.7%)). Reporting quality did not improve over time (MD -5.7% (95% CI -16.8% to 5.4%)). **Conclusions:** Articles in CONSORT-requiring journals and of low RoB studies show better reporting quality. Low reporting quality is linked to unclear RoB judgements (some concern). Reporting quality did not improve over the last 10 years and CONSORT is insufficiently implemented. Concerted efforts by editors and authors are needed to improve CONSORT implementation.

Verburg AC, van Dulmen SA, Kiers H, Nijhuis-van der Sanden MWG, and van der Wees PJ. Patient-reported outcome-based quality indicators in Dutch primary care physical therapy for patients with nonspecific low back pain: a cohort study. Physical Therapy. 2021; 101(8):pzab118.

<https://doi.org/10.1093/ptj/pzab118> [open access]

Abstract: OBJECTIVE: The purpose of this study was to define and



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select a core set of outcome-based quality indicators, accepted by stakeholders on usability and perceived added value as a quality improvement tool, and to formulate recommendations for the next implementation step. **METHODS:** In phase 1, 15 potential quality indicators were defined for patient-reported outcome measures and associated domains, namely the Numeric Pain Rating Scale (NPRS) for pain intensity, the Patient Specific Functioning Scale (PSFS) for physical activity, the Quebec Back Pain Disability Scale for physical functioning, and the Global Perceived Effect-Dutch Version for perceived effect. Their comparability and discriminatory characteristics were described using cohort data. In phase 2, a core set of quality indicators was selected based on consensus among stakeholders in focus group meetings. **RESULTS:** In total, 65,815 completed treatment episodes for patients with nonspecific low back pain were provided by 1009 physical therapists from 219 physical therapist practices. The discriminability between physical therapists of all potential 15 quality indicators was adequate, with intraclass correlation coefficients between 0.08 and 0.30. Stakeholders selected a final core set of 6 quality indicators: 2 process indicators (the routine measurement of NPRS and the PSFS) and 4 outcome indicators (pretreatment and posttreatment change scores for the NPRS, PSFS, Quebec Back Pain Disability Scale, and the minimal clinically important difference of the Global Perceived Effect-Dutch Version). **CONCLUSION:** This study described and selected a core set of outcome-based quality indicators for physical therapy in patients with nonspecific low back pain. The set was accepted by stakeholders for having added value for daily practice in physical therapy primary care and was found useful for quality improvement initiatives. Further studies need to focus on improvement of using the core set of outcome-based quality indicators as a quality monitoring and evaluation instrument. **IMPACT:** Patient-reported outcome-based quality indicators developed from routinely collected clinical data are promising for use in quality improvement in daily practice

Zara G, Settanni M, Zuffranieri M, Veggi S, and Castelli L. The long psychological shadow of COVID-19 upon healthcare workers: a global concern for action. Journal of Affective Disorders. 2021; 294:220-226.

<https://doi.org/10.1016/j.jad.2021.07.056>



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Abstract: **INTRODUCTION:** The outbreak of COVID-19 has posed unprecedented psychological pressure upon every National Health Service in the world. In Piedmont, one of the most affected areas in Italy, 4550 healthcare workers were assessed online in May-June 2020, after the acute outbreak of March-April 2020, that compelled the Italian government to enforce, what was then, the first total lockdown in the Western world. **METHODS:** Socio-demographic information of healthcare workers was gathered along with responses to: General Anxiety Disorder-7, Impact of Event Scale-Revised, Beck Depression Inventory-II, Peritraumatic Dissociative Experiences Questionnaire. Information about the need for psychological support was also gathered. **RESULTS:** The regression models predicted the presence of moderate to severe symptoms for all the conditions assessed. Almost half of healthcare workers presented at least one clinically relevant symptom, and among them one in every four expressed the need of receiving psychological support. **CONCLUSIONS:** Evidence calls for an increase of psychological services within the National Health System in Italy so as to guarantee for healthcare workers the psychological support necessary to cope with the long shadow of COVID-19, whose long-term impact is likely to reveal itself more strongly the more the acute stage of it is passed. **LIMITATIONS:** The assessment of the psychological symptoms was performed without knowing the life and professional situations of the sample, and their medical records. Healthcare workers from only one region in Italy were involved, and some professionals (e.g. self-employed healthcare workers) were not included

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