males and 13.2% for females. One occupational group was associated with an increased MetS risk in both sexes. Six additional occupational groups had an increased risk for MetS among men, four among women. Highest risks were found for male 'stationary plant and machine operators' (hazard ratio (HR): 1.94; 95% CI: 1.26–3.00) and female 'food preparation assistants' (HR: 1.80; 95% CI: 1.01–3.22).

Conclusion Findings indicate that occupational group matters for men and women in MetS development, and that differences in MetS prevalence across occupations are not merely a reflection of selection of metabolically unhealthy workers into specific occupations. The striking sex differences in the occupational distribution of MetS indicates that preventive measures should, with some exceptions, target men and women separately.

0-345 ASSOCIATIONS AMONG WORKING HOURS, ROTATING SHIFT WORKS, AND RISK OF CARDIOVASCULAR DISEASES IN TAIWAN: ANALYSES FROM THE NATIONAL LEVEL TO THE COMPANY LEVEL

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Introduction Long working hours and rotating shifts are risk factors for cardiovascular disease. National policies and corporate actions play an important role in sound working hours and shifts. Imbalanced rotation speed and working hours may double the burden of cardiovascular disease. We investigated the incidence of work-related cardiovascular disease before and after government relaxed disease recognition criteria in Taiwan. We further used a traditional manufacturing factory as an example to analyze the association between corporate health promotion activities and workers' cardiovascular disease risks.

Methods At the national level, we collected data on the number of work-related cardiovascular disease and average working hours per month before and after policy changes. At the corporate level, we collected data on shift types, working hours, health promotion activities, and 10-year risk of manifesting clinical cardiovascular disease. Our statistical analyses included applying mixed-effect models, a mediation analysis, and a generalized estimating equation.

Results The relaxation of national criteria for recognizing work-related cardiovascular disease has resulted in a 2.5-fold increase in the incidence rate. This effect was mediated by working hours. Our case study showed workers who worked 12 hours per shift had a higher risk of cardiovascular disease than those who worked 8 hours per shift. Workers who needed to rotate shifts and spent more time on each shift had a higher risk of cardiovascular disease than those who shifted but spent less time on each shift. Workers who participated in health promotion activities had a lower risk of cardiovascular disease.

Conclusion National policies relaxing disease recognition criteria have helped more workers received compensation. Criteria that quantitatively point out the hazard of prolonged working hours to cardiovascular disease prompt reductions in working hours at the corporate level. Our case study highlights potentially additional benefits of health promotion activities on the prevention of work-related cardiovascular disease.

COVID19–1

0-125 OCCUPATIONAL CHARACTERISTICS ASSOCIATED WITH SARS-COV-2 INFECTION IN THE UK BIOBANK DURING AUGUST-NOVEMBER 2020

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Objective Occupational exposures may play a key role in SARS-CoV-2 infection risk. We used a job-exposure matrix (JEM) linked to the UK Biobank to measure occupational characteristics and estimate associations with a positive SARS-CoV-2 test.

Methods People reporting job titles at their baseline interview at assessment centers in England were included. We excluded healthcare workers and people ≥ 65 years old by March 2020. Jobs were linked to a JEM based on the US O*NET database. For each job, O*NET-based scores (range=1–5) were assigned for characteristics relevant for SARS-CoV-2 infection: physical proximity, exposure to diseases/infection, outdoors-exposed to weather, and outdoors-under cover. O*NET variables were used to determine whether jobs could be done remotely based on two algorithms. We evaluated SARS-CoV-2 tests occurring between August 5th and November 10th, 2020 (time when UK was not shutdown with a 5-day lag added). Cox regression was used to calculate adjusted hazard ratios (aHRs) as estimates of associations with a positive SARS-CoV-2 test accounting for age, sex, race, education, deprivation, assessment center, household size, and income.

Results Our inclusion/exclusion criteria identified 115,581 people, including 1746 with a positive SARS-CoV-2 test. A one-point increase in physical proximity score was associated with 1.12 times higher risk of a positive SARS-CoV-2 test (95% CI=1.03–1.22). A one-point increase in exposure to disease/infections score was associated with 1.08 times higher risk of a positive SARS-CoV-2 test (95%CI=1.01–1.15). There were borderline associations between outdoors work and a positive SARS-CoV-2 test (outdoors-exposed to weather aHR=1.05, 95%CI=1.00–1.10; outdoors-under cover aHR=1.08, 95% CI=1.00–1.17). People reporting jobs that could not be done remotely had higher risk of a positive SARS-CoV-2 test regardless of the algorithm used to classify jobs (aHRs=1.16 and 1.18).

Conclusion Numerous occupational characteristics were associated with increased risk of a positive SARS-CoV-2 test even after accounting for demographic and socioeconomic differences between workers.

0-162 IMPACT OF THE COVID-19 PANDEMIC ON KEY WORKERS IN ENGLAND: FINDINGS FROM THE HEALTH AND EMPLOYMENT AFTER FIFTY (HEAF) STUDY

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Introduction In the UK, workers who were essential to maintain communications, travel, food and healthcare were deemed

'key workers'. There is scarce evidence about the effect that the pandemic had on this group of workers as compared with people who were home working, furloughed or retired.

Objectives To compare measures of health and lifestyle amongst older key workers as opposed to other older adults working or not working during the pandemic.

Methods In February 2021 participants in the Health and Employment After Fifty (HEAF) study (aged 55–73) were sent an online survey, enquiring about changes to their mental/physical health and lifestyle during the first UK lockdown (starting late March 2020). Logistic regression was used to explore the association between being a keyworker (healthcare/not healthcare) and adverse outcomes, with adjustment for age and sex. Participants in work but not identifying themselves as key workers were used as the reference category.

Results A total of 2,040 (46%) returned a usable questionnaire and completed the question about key worker status. 281 were in work but not as key workers; 50 were key workers in healthcare; 298 were key workers not in healthcare; 1,411 were retired. Key workers were predominantly women. Key workers not in healthcare were more likely to see a worsening of mental health (OR=1.6; 95%CI 1.0 to 2.4) physical health (OR=1.5; 95%CI 1.0 to 2.3), to report that their diet was less healthy (OR=1.8; 95% CI 1.2 to 2.8) and to report eating more than pre-lockdown (OR=1.6; 95%CI 1.1 to 2.4) compared with participants in work but not as key workers. Associations were similar among key workers in healthcare, however they did not reach statistical significance.

Conclusion Being a key worker during the pandemic (especially not in healthcare) was associated with a deterioration of health and lifestyle choices.

0-222

RISK OF INPATIENT CARE WITH COVID-19 IN DIFFERENT OCCUPATIONAL GROUPS: THE ROLE OF CLOSE HUMAN CONTACTS IN THE WORK ENVIRONMENT

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Introduction Several cross-sectional studies indicate that occupations such as physicians, nurses, dentists, physiotherapists, bus- and taxi drivers, bartenders, waiters, chefs and shop assistants either have higher risks of dying or be tested positive due to COVID-19.

Objectives The aim of this study was to analyse if employees in occupations characterized by working close to other people and/or being more exposed to diseases or infections are treated for inpatient care due to COVID-19 more often than other employees.

Methods Survey data regarding proximity to other people and to what extent individuals are exposed to diseases and infections were retrieved from <https://onet.rti.org/about.cfm>. Analyses were based on a prospective cohort comprising 1 037 811 residents in Region Stockholm March 1, 2020, 18–64 years old and having a valid occupational code. The follow-up period was nine months. Quartiles were created, based on averages for each occupation regarding these questions. Adjusting factors were age, country of birth, daily smoking, overcrowding, household size and percentages in demographic

areas being test positive to COVID-19. We calculated both IRR's and SMR's.

Results During the period, 2984 individuals received inpatient care for COVID-19. Higher risks were observed in the highest exposed quartiles after adjusting for confounders. These associations were found among both sexes, in all age groups and in each 3-month calendar period with IRR's ranging from 1.68 to 2.58 compared to the least exposed quartile. SMR's calculated for each occupation revealed higher risks among e.g. physicians, nurses, assistant nurses, care assistants and traffic instructors with SMR's ranging from 138 to 272.

Conclusions A strength of this study is the use of inpatient care as an outcome, and adjustment for individual confounders. The observation that the risk from close occupational contacts was not reduced over the observation period highlights the importance of further improvement of risk assessment and protective measures.

0-332

AN UMBRELLA REVIEW OF THE WORK AND HEALTH IMPACTS OF WORKING IN A PANDEMIC ENVIRONMENT

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Introduction The effects of the coronavirus disease 2019 (COVID-19) pandemic on work, employment and health are considerable. There is a need for actionable and targeted evidence that policy-makers, employers, workers and other stakeholders can use to ensure that work is safe and healthy not only during the COVID-19 pandemic, but also in its aftermath.

Objectives The purpose of this umbrella review is to inform evidence-based decision making and best practices for the work and health of workers during an epidemic/pandemic; and to identify research gaps to inform evidence needs for future studies and research funding priorities. We examined the evidence on the work and health impacts of working in an epidemic/pandemic environment; factors associated with these impacts; and possible risk mitigation or intervention strategies that address these factors or outcomes.

Methods We examined review articles published in MEDLINE, PsycINFO and Embase between 2000 and 2020. Data were extracted and analyzed using a narrative synthesis.

Results The search yielded 1,524 unique citations, of which 31 were included. The search yielded a large volume of reviews on mental health and infection risk to health care workers. Reviews identified a variety of individual, social, organizational and risk mitigation factors that influenced study outcomes. Equity considerations were only tangentially referenced in the included studies. Only a few reviews examined intervention strategies in the workplace, and none included long-term outcomes of exposure or work during an epidemic/pandemic.

Conclusion Findings suggest a number of critical research and evidence gaps, including the need for reviews on occupational groups potentially exposed to or impacted by the negative work and health effects of COVID-19 in addition to health care workers, the long-term consequences of transitioning to the post-COVID-19 economy on work and health, and research with an equity or social determinants of health lens.