

Occupational differences in COVID-19 hospital admission and mortality between women and men in Scotland: A population-based study using linked administrative data

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Objectives

We aim to estimate occupational differences in COVID-19 hospital admission and mortality by sex. Occupations vary with respect to environmental factors that influence exposure to COVID-19 such as ventilation, social contact and protective equipment. Variations between women and men may arise because they occupy different roles within an occupation or from behavioural differences.

Approach

We established an innovative linked data collection combining individual-level data from 2011 Census with health administrative records and household identifiers from Ordnance Survey's Unique Property Reference Number (UPRN). Using data for a cohort of approximately 1.7 million Scottish adults aged 40 to 64 years, we analysed occupational differences in COVID-19 hospital admission and mortality, during the period between 1 March 2020 and 31 January 2021. We estimated age-standardised incidence rates (ASIRs) for COVID-19 hospital admission and death per 100,000 adults, stratified by sex and occupation. Using Cox proportional hazards models, we estimated COVID-19 hospital admission and death risks, adjusting for socio-economic and pre-pandemic health factors.

Results

Generally, women had lower ASIRs for COVID-19 hospital admission and mortality compared to men. For COVID-19 mortality, ASIRs were highest among women employed in elementary trades and related occupations (e.g. packers/canners). For hospital admission, high rates were observed among women working in caring personal services (e.g. nursing assistants/ambulance staff). Among men, ASIRs were highest among those in elementary services occupations (kitchen assistants/waiters) and taxi drivers, who also had the highest admission rate. After adjusting for pre-pandemic health factors, we observed lower death risks for women employed as health professionals, and those in associate professional and technical occupations (medical technicians/paramedics), compared to the baseline model. Lower adjusted admission risks were also observed for both women and men in professional occupations (e.g. in science/engineering and teaching/education). Among men, adjusted death risks remained elevated for large vehicle and taxi drivers, who also displayed high admission risks.

Conclusion

Occupational differences in COVID-19 hospital admission and mortality between women and men may be explained by a mixture of social, workplace and behavioural factors. These need to be considered when designing intervention policies which aim to reduce infections in the workplace.

