

Background: Studies have shown a higher mortality due to COVID-19 amongst certain professions. The risk of becoming infected with SARS-CoV-2 and the occupational conditions associated with this, have not been studied extensively. This study aimed to develop and validate a Job Exposure Matrix (JEM) to assess the risk of COVID-19 in the workplace.

Methods: Researchers from three European countries defined six dimensions (four transmission determinants, two mitigation measures) to classify occupational risk. A combination of national statistics and expert judgement was used to classify ISCO-08 codes in no, low, elevated, or high risk for each dimension. Two data driven aspects of precarious work were also included and classified in four categories. The JEM was translated to SOC2010-codes and validated by comparing it to UK infection survey data and ONS estimates of exposure based on ONET data.

Results: A slightly increasing proportion of COVID-19 cases was observed with increasing risk scores in each dimension of the JEM. There was a high correlation between the JEM and the ONS estimates for physical proximity ($r = 0.71$) and exposure to COVID-19 or SARS-CoV-2 infection ($r = 0.80$)

Conclusions: Successful development and initial validation of this JEM has resulted in a useful tool for risk assessment of COVID-19 in the workplace. Further validation exercises will continue.

Key messages: This publicly available JEM can play a key role in the essential assessment of occupational contribution to the total burden of the COVID-19 pandemic.

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Development and validation of a Job Exposure Matrix for work related risk factors for COVID-19

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