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“Mat-O-Covid”: a SARS-CoV-2 (COVID-19) Job Exposure Matrix

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STATEMENT SLIDE

I disclose the following conflicts of interest:

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- Associate Editor of Archives of Environmental and Occupational Health (Taylor and Francis)
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Aim and Method

Aim

- Develop and validate a job-exposure matrix (JEM) for SARS-CoV-2 exposure called “Mat-O-Covid” project (“COVID-Mate” in French).

Method

- JEM was developed by a group of experts for all workers, and a focus on the health and care sector.
- The average of the experts' coding was used as estimates for both estimates, exposure "subjects" (colleagues and/or public) and "patients" for the focus on the health and care sector,
- The probability of prevention for each was also assessed

Prevention categories considered and examples.

Prevention category	Type of prevention	Example of lack of preventive measures (0%)	Examples of optimal prevention (100%)	Intermediates to consider (between 0 and 100%)
Distancing	<i>Distancing at work</i>	Working with others in small spaces, open spaces and non-compliance including for breaks/meals	Total containment/teleworking	Density per office (including office alone)/store/space/staff training/plexiglass/activity (as it may require unconscious closeness)/job stress (may cause loss of attention to distancing compliance)
	<i>Distancing in "peri-work" mode</i>	Lack of space during social times (breaks/meals), travel in-between	Isolation (conviviality/car alone)	Staff training, staggered meal times, travel time and compliance with isolation/carpooling
Ventilation	<i>Ventilation/outdoor</i>	No ventilation or airing	Outdoor work	Ventilation characteristics (separate source and general ventilation (renewal rate, etc.)), maintenance of ventilation (central and air treatment), natural ventilation (opening of windows, other), scrubbers with or without specific filtration (other efficiency)
Hygiene	<i>Hand washing</i>	None	Very regular and with every potential contact	Availability of products, type of surface, simple washing/disinfection/surgical procedure
	<i>Washing of work surfaces</i>	None	Very regular and with every potential contact	Availability of products, type of surface, maintenance procedure
Protection	<i>Respiratory protection/mask</i>	No protection	Regular adapted wear	Type (surgical mask/FFP2/KN95/consumer mask), change, fit, fitting and change procedure, activity type (heat and stress tolerance)
	<i>Hand protection (gloves) and contact protection</i>	No protection	Regular adapted wear	Glove/apron and gown, change/proper wear/procedure.
	<i>Eye protection</i>	No protection	Regular suitable wear	Goggles, face protection, change/correct wearing/procedure.
Specific vaccination	<i>Specific vaccination</i>	None	All personnel with an effective vaccine	Incomplete vaccination

Results

- Intraclass correlations were considered **good to excellent**, ranging from 0.70 [0.3-0.82] and 0.95 [0.94-0.96]; this was also true for the care and health JEM (0.74 [0.66-0.81]); *however, they were poor for prevention in health, P4 (ICC 0.24 [0.02-0.42]).*
- Compared to the United States O*Net JEM, the evaluation was considered as fair: with “subjects” (“To what extent does this job require the worker to perform job tasks in close physical proximity to other people?”) a fair correlation (Spearman Rho 0.40, $p < 0.0001$), as well as one estimation for the exposure assessment of contact with patients (“How often does this job require exposure to disease/infections?”) with a good correlation (Spearman Rho 0.63, $p < 0.0001$)

Conclusion

The "Mat-O-Covid" JEM providing a probability of occupational exposure to SARS-CoV-2 will have implications for research and public health, taking into account that its limitations are known, and its validation is still in progress



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