



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

255

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

Alexis Descatha<sup>1</sup>, Marc Fadel<sup>2</sup>, Sabrina Pitet<sup>3</sup>, Catherine Verdun-Esquer<sup>4</sup>, Yolande Esquirol<sup>5</sup>, Clement Legeay<sup>6</sup>, Aurelien Dinh<sup>7</sup>, Brigitte Clodore<sup>8</sup>, Pascal Duprat<sup>9</sup>, Sandrine Cartégnie<sup>10</sup>, Céline Dagrenat<sup>11</sup>, Jean-Pierre Leclerc<sup>12</sup>, Pascal Andujar<sup>13</sup>, Corinne Letheux<sup>14</sup>, Mat-O-Covid Investigator list<sup>1</sup> Audrey Petit<sup>2</sup>, Yves Roquelaure<sup>2</sup>

<sup>1</sup> Univ Angers/ CHU Angers/ Inserm, U1085 - Irset-Ester- PCC-CDC, Angers, France, <sup>2</sup> Univ Angers/ CHU Angers/ Inserm, U1085 - Irset-Ester, Angers, France, <sup>3</sup> CHU Angers, PCC, Angers, France, <sup>4</sup> CHU Bordeaux, Service de santé au travail, Bordeaux, France, <sup>5</sup> Univ/ CHU Toulouse, Service de santé au travail/ CERPOP, UMR1295, Bordeaux, France, <sup>6</sup> CHU Angers, Unité de prévention et de lutte des infections nosocomiales, Angers, France, <sup>7</sup> AP-HP, Univ Paris Saclay, Unité des maladies infectieuses, Paris, France, <sup>8</sup> Ville de Paris, Service de santé au travail, Paris, France, <sup>9</sup> DIRECCT Île-de-France, MIT, Paris, France, <sup>10</sup> SISTBI, Service de santé au travail, La Réunion, France, <sup>11</sup> CMIE, Service de santé au travail, Paris, France, <sup>12</sup> INRS, Département Ingénierie des Procédés, Nancy, France, <sup>13</sup> Univ Créteil, CRPPE, Créteil, France, <sup>14</sup> Presanse, Service médical, Paris, France

While exposure assessment is complex for the occupational risk researcher, the objective of our work is to develop and validate a job-exposure matrix (JEM) for SARS-CoV-2 exposure called "Mat-O-Covid" project ("COVID-Mate" in French).

A group of French experts, the JEM was developed for all workers using the 2003 Occupation and Socioprofessional Categories (with a transcoding gateway to the 2008 International Standard Classification of Occupations) 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, as well as the probability of prevention for each. Intraclass correlations were considered good to excellent except for health prevention. Compared to the United States O\*Net JEM, the evaluation was considered as fair.

In conclusion, a "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.

NB: Mat-O-Covid is available at <https://www.sciencedirect.com/science/article/pii/S1775878521001296#upi0005>

256

**The impact of death of COVID-19 patients on mental health of healthcare workers: a latent profile analysis of post-traumatic stress symptoms**

Igor Portoghese, Maura Galletta, Marcello Campagna

University of Cagliari, Medical Sciences and Public Health, Monserrato, Italy

Introduction. The COVID-19 pandemic crisis significantly impacted workplaces across the world. Healthcare workers (HCWs) had to promptly manage unpredictable daily severe critical patients, caring for severely traumatized patients, and frequent witnessing of

death of patients. More recently, many studies highlighted how the large number of deaths and the way patients were dying significantly impacted mental health of HCWs, exposing them to the risk of developing post-traumatic stress (PTS) symptoms. The main purpose of this study was to explore subtypes of HCWs on the levels of PTS symptoms, considering those workers who cared for patients who died of COVID-19.

Materials and Methods. An online survey was conducted using LimeSurvey. We applied latent profile analysis (LPA) to identify profiles of PTS symptoms in a sample of Italian HCWs (n=543). LPA including one to six latent profiles were estimated by using MPlus 7 robust maximum-likelihood estimator (MLR).

Results. LPA showed a three-latent-profile solution: high-PTS symptoms (high levels of intrusion, avoidance, and hyperarousal; n=35), moderate-PTS (moderate levels of intrusion, avoidance, and hyperarousal; n=397), and low-PTS (low levels of intrusion, avoidance, and hyperarousal; n=111).

Conclusions. To our knowledge, no studies have yet examined whether distinct subgroups of PTS symptoms can be identified among HCWs exposed to the death of COVID19 patients. Using person-centered methods for the identification of latent patterns of PTS symptoms may potentially have conceptual, diagnostic, and treatment implications.

257

**Analysis on the evolution of the personal protective equipment proposed in catalan hospitals during the first wave of the covid-19 pandemic**

Berta Roviró-Aliguer<sup>1</sup>, Marina Rovira-Puig<sup>2</sup>, Júlia Seco-Orriols<sup>3</sup>, Rosa Maria Orriols-Ramos<sup>4</sup>

<sup>1</sup> UPC, Barcelona School of Industrial Engineering (ETSEIB), Barcelona, Spain, <sup>2</sup> Charm-EU scholar, Eötvös Loránd University, Budapest, Hungary, <sup>3</sup> Universitat Pompeu Fabra, Faculty of Medicine, Barcelona, Spain, <sup>4</sup> Hospital Universitari de Bellvitge and Universitat de Barcelona, Sustainability and environmental health, Barcelona, Spain

INTRODUCTION: This project arose to suggest in-depth research on key topics to give our health system better tools to face future outbreaks. And in order to determine the flaws in the response given to the COVID-19 pandemic and what led to them, all to prevent them from happening in future outbreaks.

MATERIAL AND METHODS: WHO's tuberculosis laboratory biosafety manual and the tuberculosis patient insulation procedure from the Bellvitge hospital as examples of protocols before the pandemic and V2, V2.3 and V3 of Pla EPI as examples implemented during the outbreak have been used. Pla EPI was created to help distribute PPE (Personal Protective Equipment) among healthcare personnel based on their tasks and taking into consideration the lack of it due to the collapse in the supply chain faced during the first wave. By summarizing the documents of interest using data tables. A comparative between the PPE proposed in the different published versions of "Pla EPI" has been made.

RESULTS AND CONCLUSIONS: This comparison has led to the conclusion that new protocols offer a more bilateral healthcare worker/patient protection instead of only focusing on protecting the worker from patients' pathogens. In relation to pla EPI, considering the now demonstrated importance of aerosols in transmission of COVID-19, we conclude that PPE available at the