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.

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terventions are most suitable for mental health care. Current research suggests an effectiveness of virtual care interventions that is superior to waitlist controls. However, to show effectiveness over traditional psychiatric care studies should use comparison groups that are comparable to the intervention studied avoiding waiting list or other non-intervention arms. One of the main advantages of digital therapeutics is that these interventions will also become accessible to people who do not have access to healthcare, such as patients who live far from healthcare centres, cannot travel because of disability or family commitments or cannot afford traditional care. In this way, self-directed digital therapeutics can contribute to healthcare equity.

No conflict of interest

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P.0266
The mental health response to the first wave of covid-19 in an international sample

M. Van Ameringen 1, J. Turna 1, B. Patterson 1, C. Goldman Bergmann 1, L. Nina 1, M. Rahat 1, H. Dwyer 1, A.P. Francisco 1, M. Vismara 2, B. Sideris 1, B. Dell’Osso 2

1 McMaster University, Psychiatry and Behavioural Neurosciences, Hamilton, Canada; 2 University of Milan, Biomedical and Clinical Sciences- Luigi Sacco, Milan, Italy

Background: Multinational studies have recently reported significantly higher rates of anxiety and depression seen in the general population, compared to pre-COVID-19-pandemic levels.[1] Younger age cohorts and female sex have emerged as predictors for worse mental health (MH) and there is also evidence to suggest that the MH burden on healthcare practitioners (HCPs) is a significant cost of the pandemic.[2, 3] Negative psychological consequences for HCPs have been highlighted in previous epideemics and pandemics including Severe Acute Respiratory Syndrome[SARS], SARS-CoV, SARS-CoV-2, H1N1, Middle East Respiratory Syndrome [MERS] and Ebola. This study aims to examine and compare the impact of COVID-19 on the MH of an international cohort from Canada, the United States of America (US), Brazil and Italy. Given that very few studies have reported this information thus far, we focused our analysis on the MH of HCPs within these countries.

Methods: Adults aged 18 and over completed an online survey posted at anxiety treatment centre websites in Canada, USA, Brazil and Italy from April 8th - June 11th, 2020. The survey included questions regarding COVID-19 experience, perceived impact of the pandemic on life domains (e.g., social communication, finances), coping strategies (e.g., online activities, substance use), and MH treatment history. Current psychiatric symptom severity and impairment were evaluated using the Generalized Anxiety Disorder-7, Patient Health Questionnaire-9, the Perceived Stress Scale, the Obsessive Compulsive Inventory-Revised (OCI-R), the PTSD Checklist (PCL-5) and the Quality of Life Enjoyment and Satisfaction Questionnaire.

Results: Overall, 1315 individuals (74% female, mean age:42.9±16.4) in Canada (n=443), the USA (n=203), Brazil (n=517) and Italy (n=152) completed the survey. Nearly 26% met diagnostic thresholds for GAD and MDD. Compared to the other countries, fewer Italians met DSM-5 screening criteria for GAD (p=0.007) or depression, (p=0.05). In addition, quality of life satisfaction scores were significantly lower in Italy and Brazil when compared to North America, (p=0.001), indicating lower satisfaction. Non-HCPs (vs. HCPs) reported significantly higher scores (p=0.005) on all MH scales with the exception of the GAD-7, even after adjusting for age, sex, past MH treatment and country. Non-HCPs also reported lower quality of life. Amongst the HCPs, Canadian HCPs reported the highest rates of anxiety, depression, stress and PTSD compared to Canadian non-HCPs and to HCPs in the other countries. Higher proportions of Canadian HCPs also reported decreases in sleep, increases in eating and more time spent watching the news as well as lower levels of perceived emotional support compared to Canadian non-HCPs

Conclusion: Despite key infrastructural and COVID-19 mortality differences between the countries, the MH effects appeared to be quite similar within the general populations. HCP status was associated with lower levels of stress, anxiety, depression and related symptoms, with the exception of Canada. Canadian HCPs reported higher symptom severity scores than HCPs from the remaining countries. Therefore, with the exception of Canada, HCPs reported less impact on their mental health compared to the general population, in response to the COVID-19 pandemic, potentially suggesting resilience in the face of adversity.

No conflict of interest

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P.0267 Persistent psychopathology in covid-19 survivors at one-year follow-up

M.G. Mazza 1,2, M. Palladini 1,2, B. Bravi 1,2, S. Poletti 1,2, P. Rovere-Querini 1,3, F. Benedetti 1,4

1 University Vita-Salute San Raffaele- Milano- Italy, Neuroscience, Milan, Italy; 2 Psychiatry %26 Clinical Psychobiology Unit, Division of Neuroscience, IRCCS Scientific Insti-
Discussion: pressant 19 score positive depression,

Results: Revised Self-Rating cal keep tal ical Methods: impact systems.

and data described, using naturalistic index sore COVID becomes at most anxiolytic history, the least anxiety, psychiatric psychopathology. This the effect of one-year follow-up, also considering the effect of possible risk factors.

Methods: We prospectively evaluated the psychopathological status of 160 COVID-19 survivors one year after hospital discharge during an ongoing prospective cohort study. To keep a naturalistic study design, exclusion criteria were limited to patients under 18 years. Sociodemographic and clinical data were collected. Current psychopathology was measured using the following self-report questionnaire: Zung Self-Rating Depression Scale (ZDS), Impact of Events Scale-Revised (IES-R), State-Trait Anxiety Inventory form Y (STAI-Y), and Fatigue Severity Score (FSS). Need of antidepressant or anxiolytic treatment in the last year was collected. Statistical analyses to compare group means and frequencies (Student’s t-test, Pearson χ² test) exploring effects of sex, psychiatric history, and hospitalization for COVID-19 were performed.

Results: Overall, 77 patients (48%) scored in the clinical range in at least one psychopathological dimension among depression, anxiety, and PTSD. Females and patients with a positive previous psychiatric diagnosis showed an increased score on most measures (Table). Hospitalization for COVID-19 did not affect psychopathology. During the year after COVID-19, 25 (16%) and 23 (14%) patients started an antidepressant or anxiolytic treatment respectively.

Discussion: This is the first study that investigates psychopathology in a sample of COVID-19 survivors at one-year follow-up after hospital treatment. We reported high rates of persistent psychopathology consistently with previous coronavirus outbreaks.

Psychiatric consequences to SARS-CoV-2 infection can be caused by the immune-inflammatory response to the virus itself or by psychological stressors such as social isolation, concerns about infecting others, and stigma.

Considering that neuropsychiatric sequelae associates with a markedly increased risk of all-cause mortality, and given the alarming prevalence of post-COVID psychopathology, we now suggest to routinely assess psychopathology of COVID-19 survivors in order to promptly diagnose emergent disorders and to treat them to reduce the disease burden and related years of life lived with disability.

No conflict of interest

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P.0269
Does CPG methylation mediate cannabis-associated cognitive task performance? a cross-sectional pilot study

M. Wiedmann1, J. Franzen2, W. Wagner2, L. Basedow1, V. Roessner1, S. Kuitunen-Paul1, Y. Golub1

1 Technische Universität Dresden - Faculty of Medicine, Department of Child and Adolescent Psychiatry, Dresden, Germany; 2 Helmholtz-Institute for Biomedical Engineering, Stem Cell Biology and Cellular Engineering, Aachen, Germany

Background. The association between cannabis use (CU) and cognitive impairment among adolescents has been the subject of controversial debate. Previous studies on cannabis and THC exposure on DNA methylation have indicated that cannabis might affect gene expression via DNA methylation at CG dinucleotides (CpG methylation) in genes affecting neurodevelopment and neuronal signaling [1]. Linking CpG methylation to CU could help to understand changes in cognitive performance that is associated with CU. Yet no previous study has examined the epigenetic influences of high CU on performance in cognitive tasks in adolescents with cannabis use disorders.

Methods. The sample consisted of n = 18 adolescents, n = 9 with CU and n = 9 without, matched on age (M (17) = 15.6, SD = 1.5), gender (78% males) and (comorbid) psychiatric disorders (M (17) = 0.9, SD = 1.4). We analyzed DNA methylation at approximately 850,000 CG dinucleotides (CpG sites) in peripheral whole-blood, self-reported past-year CU via a Quantity-Frequency-Index, and cognitive task performances and comorbid psychiatric disorders via Mini International Neuropsychiatric Interview for Children and Adolescents. The cognitive tasks consisted of a verbal learning memory task (VLMT), inhibitory control tasks, divided attention and alertness tasks. Correlation analyses were performed between CU and cognitive task performance and CU and CpG sites in order to identify CU associated CpG sites. After correcting for multiple testing (Bonferroni) mediation analyses were performed to test whether relationships between CU and performance in cognitive tasks were mediated by methylation specific CpG sites.

Results. Methylation in six CpG sites (associated with the genes SH3PXD2B, DGCR8, ZNF107, SNX15/SAC3D1, EPN2 and an intergenic CpG) were significantly associated with past-year CU (r = -.93 to -.95; p = 3.78 x 10^-9). Notably, all genes that are associated with methylation of the six identified CpG sites have previously been associated with processes involved in cognition and memory. CU was associated with two variables in cognitive tasks, 1) the total score in a verbal learning task in which a word list was learned and repeated five times and 2) verbal learning cued recall, in which the learned words had to be identified among distractor words. All six CpG sites mediated the effects between CU and verbal learning total score (R^2 = 85.6% - 90.6%; c^2 = 0.16 - 0.22; Z = -2.01 - -2.86; P = .045 - .004). No mediation effects were found for verbal learning cued recall.

Conclusions. Our results indicate that CU may affect memory function via CpG methylation at genes involved in hippocampal (EPN2, SNX15, DGCR8) and general neurogenesis (SH3PXD2B, SAC3D1) in adolescents with cannabis use disorders. Further, DGCR8 has been postulated a candidate for 22q11.2 deletion-associated schizophrenia, which is one of the highest known genetic risk factors for developing schizophrenia [2]. Future studies should replicate these findings with larger sample sizes and additionally measure mRNA and protein expression.

Conflict of interest
Disclosure statement:
The authors declare the following financial interests/personal relationships which may be considered as potential conflicts of interest: SKP reports grants and non-financial support during the past 36 months from German Federal Ministry of Health (BMG), personal fees from IAP-TUD GmbH, personal fees from Carus Vital GmbH, personal fees from Berufsverband der Pneumologen in Sachsen e.V., personal fees from Gesundheitsamt Dresden as funded by the German Federal Centre for Health Education (BzgA), personal fees from Mabuse Verlag, personal fees from a consortium funding a public speech (AbbVie Germany, Almirall Hermal, Belano medical, Celgene, Janssen-Cilag, LEO Pharma, Lilly Germany, Novartis Pharma, Pfizer Pharma, UCB Pharma), and non-financial support from College on Problems of Drug Dependence (CPDD), all outside of the submitted work.

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WW is cofounder of Cygenia GmbH (www.cygenia.com), which provides service for epigenetic analysis to other scientists and was involved in this study. JF contributes to this company, too.

MW, LB and YG declare no competing interests.

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