S0002

Experiences and projections for the future of research, training and other academic activities: Will it be the same?

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The global SARS-CoV-2 pandemic with subsequently imposed restrictions and lockdowns also radically disrupted academic life. Many research projects involving recruitment of human subjects were abruptly put on hold, educational activities have moved into online trainings, scientific meetings have been transformed into virtual events. Social distancing does not restrict only everyday human contact but also limits direct exchange of clinical, educational, and research experiences, professional and academic networking, sharing ideas. Besides all the drawbacks, does the current situation also bring any advantages? Every challenge results in new opportunities. Although the online congresses will most likely never fully replace real-life experience, it was found that many work meetings can be held more efficiently via online communication. Saving time, cutting costs of travel and accommodation, plus other expenses, may help to allocate limited resources where needed. Similarly, while practical medical education and training cannot be substituted for remote broadcasting, many theoretical presentations can. More importantly, epidemic of COVID-19 is a unique opportunity for mental health research, to study individual and population consequences of the virus, its impact on psychiatric patients. It is still early to predict whether and when research, training, meetings, and other academic activities return back to "normal", but appears that some changes are here to stay.

Disclosure: No significant relationships.

Health and environmental resilience: Effects of urbanisation, climate change and environmental determinants on mental health

S0001

Is resilience a protective factor against the effects of the COVID-19 pandemic on mental health? Results from a national multicentric study

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The COVID-19 pandemic is impacting on the mental health of the general population and its consequences will be long lasting. As already noted in previous epidemics, different factors can moderate the detrimental impact of a traumatogenic event on mental health. In particular, it has been found that people using problem-solving coping strategies, with an adequate social network and supported by family members, have good long-term outcomes and are able to adjust to the detrimental impact of the traumatic event. The COvid Mental hEalth Trial (COMET) network, including ten university Italian sites and the National Institute of Health, has promoted a national online survey in order to evaluate the impact of COVID-19 pandemic on the mental health of the Italian general population. In particular, the use of Internet and social media, the duration of the exposure to COVID-19 related containment measures, the different levels of post-traumatic growth and the variety of coping strategies adopted have been considered as possible mediators of the resilience styles adopted. In our sample, participants from the general population reported a good level of resilience compared with people with pre-existing mental or physical disorders. This data should be taken seriously in consideration in order to develop appropriate psychosocial interventions for supporting resilience in people at high-risk in order to mitigate the detrimental impact of the pandemic.

Disclosure: No significant relationships.
Keywords: resilience; trauma; mental health

S0002

The ecological momentary assessment approach and the use of big data to analyse possible effects of urbanisation on mental health

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Introduction: Smart healthcare monitoring allows detecting health conditions using Big Data, namely aggregated data concerning physiological and behavioral parameters. The continuous collection of data from smart-devices performed by the Ecological Momentary Assessment approach represents a promising application of Big Data.
Objectives: This preliminary study was aimed at developing a research protocol focused on the use of Big Data in evaluating the impact of urban environment, affected by a variety of potentially damaging anthropogenic actions, on illness relapses in Bipolar Disorders (BD).
Methods: This pilot study was designed by researchers from Departments of Psychiatry and Engineering (CIRIAF), University of Perugia. Environmental, physiological, and behavioral parameters and smart-devices aimed at collecting Big Data were identified. Subjects aged 18-65, affected by BD in current euthymic state referring to the University/General Hospital of Perugia will be recruited.
Results: Subjects will undergo a baseline visit and three monitoring visits during one year. Wearable devices will be provided for collecting data about environmental and physiological parameters. Behavioral data will be collected through smartphone accelerometers, GPS, and overall smartphone use. Big data will be stored into an online platform that will provide real-time feedback concerning the recorded variables. Clinical information concerning BD relapses will be collected. Machine learning techniques, integrated to deterministic analysis of urban environmental conditions, will be used to create possible predictive models for BD relapses.

Conclusions: The present project could allow the creation of a new operative platform for a better health management system correlating real-time Big Data to specific clinical features of BD.

Disclosure: No significant relationships.
Keywords: bipolar disorder; environment; Big Data; urbanisation

S0003

Climate change and mental health: An overview

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According to the UN Environment Programme "climate change is one of the most pervasive and threatening issues of our time". "In many places, temperature changes and sea-level rise are already putting ecosystems under stress and affecting human well-being" (1). The presentation wants to give an overview on how climate change can affect mental health. A search was performed on PubMed for the combination of "climate change" and "mental health". 281 publications were identified, the first being from 2007 (the only one in that year). In 2020, until Dec 22nd, 76 publications were found. The somehow prophetic 2007 publication reviews "natural disasters, climate change and mental health considerations for rural Australia" (2) and pinpoints central aspects of today's debate, namely anxiety and depression, vulnerability and resilience. In addition to problems of rural areas (2), the impact of urbanicity (3) will be discussed as well as the role of air pollution on psychiatric disorders (4). (1) UN Environment Programme. https://www.unenvironment.org/explore-topics/climate-change/about-climate-change Dec 22nd, 2020. (2) Morissey SA, Reser JP. Aust J Rural Health. 2007 Apr;15(2):120-5. doi: 10.1111/j.1440-1584.2007.00865.x. (3) Krabbendam L et al. Psychol Med. 2020 Mar 11:1-12. doi: 10.1017/S0033291720000355. (4) Kim SY et al. Sci Total Environ. 2020 Dec 8;757:143960. doi: 10.1016/j.scitotenv.2020.143960.

Disclosure: No significant relationships.
Keywords: air pollution; climate change; mental health; Urbanicity

Genomic and transcriptome signatures of endophenotypes of major depressive disorder: Recent insights, current challenges and future prospects

S0007

The effect of childhood trauma and trauma-focused psychotherapy on blood expression in patients with major depressive disorder

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The only available genome-wide study (Minelli et al., 2018) indicated an association between the neglect CT and MED22, a transcriptional factor gene. To verify how the dysregulation of MED22 could be affected by environmental and genetic factors, we carried out an analysis on these components and a longitudinal study concerning the effect of trauma-focused psychotherapy in MDD patients that experienced CT. On a large mRNA sequencing dataset including 368 MDD patients we computed the genetic (GReX) and the environmental (EReX) components affecting gene expression in relation to CT. Furthermore, we measured the expression of MED22 in 22 MDD patients treated with trauma-focused psychotherapy. The dissection of MED22 expression profiles revealed an association of neglect with environmental and genetic components ($p=6x10^{-3}$ $p=2.6x10^{-4}$). Furthermore, in an independent cohort of 177 controls, we also observed a significant association between cis-eSNPs of MED22 and higher neuroticism scores (best p-value: 0.00848) that are usually associated with a decreased amount of resilience to stress events. Finally, the results of psychotherapy revealed a reduction of depressive symptomatology (p<0.001) and 73% of patients resulted responders at the follow-up visit. MED22 expression during psychotherapy showed a change trend (p=0.057) with an interaction effect with response (p=0.035). Responder and non-responder patients showed MED22 expression differences at different trauma-focused psychotherapy timepoints (p=0.15; p=0.012) and at the follow-up (p=0.021). Our results provide insights suggesting that some biological and clinical consequences of CT depend on genetic background and environmental factors that could induce vulnerability or resilience to stressful life events.

Disclosure: No significant relationships.
Keywords: Blood Expression; childhood trauma; major depressive disorder; psychotherapy

S0008

Telomere attrition and inflammatory load in major depressive disorder

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Patients with major depressive disorder (MDD) present features that suggest the involvement of accelerated aging, such as increased circulating inflammatory markers and shorter telomere length (TL). Here we measured T-lymphocytes TL with quantitative fluorescent in situ hybridization (Q-FISH) and plasma levels of inflammatory markers in a cohort of 37 patients with MDD and 36 non-psychiatric controls (C). TL was shorter in MDD compared to C (F=8.52, p=0.005). Patients with treatment resistant (TR) MDD