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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trol. An important UPR sensor, IRE1, was increased in T2DM group (2.4-fold, p=0.001), after metformin administration - by 1.99-fold, after PA treatment - by 1.45-fold vs. control. Metformin+PA combination normalized IRE1 content to control values.

Conclusions: T2DM-induced imbalance of UPR signaling may trigger nerve cell dysfunction in VMH. Combination of metformin+PA may have beneficial effects via GRP78 activation and normalization of IRE1/ATF6 levels in VMH upon T2DM development. Whether PA influence on the UPR state in VMH is direct or mediated by indirect mechanisms, is currently addressed.

No conflict of interest

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P.0258
Investigating the biological pathway between urbanicity and psychiatric disorders: a research proposal

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Background There is growing awareness that urbanicity is associated with an increase in mental disorders. However, there is still limited research investigating the biological pathways between urbanicity and psychiatric disorders. Urbanicity is thought to increase stress reactivity. Generally, stress has been shown to lead to inflammation, suggesting that stress generated by urban environments could also lead to inflammation, which %26nbsp;has been implicated in psychiatric disorders. Since factors such as urbanicity, stress, and inflammation are relevant to a variety of psychiatric disorders, a transdiagnostic approach would be appropriate in investigating this research question.

The main objective is to investigate the biological pathway between urbanicity and psychopathology in a transdiagnostic sample of patients with psychiatric disorders. It is hypothesized that worse urbanicity factors are related to more severe psychopathology. It is further expected that stress and inflammation/immunology markers mediate the relationship between urbanicity and psychopathology.

Methods The sample consists of patients with psychiatric disorders who participated in the Across study, an ongoing, observational longitudinal cohort study and consists of the assessment of cognitive performance, psychiatric symptoms, and collection of biological data [1]. Data on cognitive performance and psychiatric symptoms have been collected from 1113 participants at baseline and 295 at follow-up. 1308 blood samples have been collected.

To assess urbanicity, we will use environmental (exposure) data from the Geoscience and Health Cohort Consortium (GECCO) [2]. Psychopathology domains are assessed with a variety of self-report questionnaires [1]. Cognitive functioning is assessed with the Cambridge Neuropsychological Test Automated Battery. Inflammation markers that will be measured include cytokines, immunoglobulin, C-reactive protein, and white blood cell count. Stress will be measured with blood cortisol and dehydroepiandrosterone blood cortisol levels.

The interrelationships between urban factors, biomarkers, and psychopathology will be assessed contemporaneously as well as longitudinally. To assess contemporaneous relationships, undirected graphical models, such as Markov Random Field or a partial correlation network, will be conducted to highlight potential causal pathways. To assess longitudinal relationships, directed acyclic graphs will be conducted. Both undirected and directed graph/network models consist of nodes (variables) and edges (associations) and test for conditional independence relationships, in which variables are controlled for all other variables in the network. Mediation pathways can be implemented using generalized linear models and significance is determined with confidence intervals that are obtained via bootstrapping, such as the Monte Carlo approach. Potential confounders to be included in the models are gender, age, medication use (including use of corticosteroids), and substance use.

Conclusion Urbanization is increasing and bringing with it a set of challenges that can negatively impact residents of urban areas. With the increased popularity of urban living, it is important to tackle effects that the urbanicity social issue has on mental health as this could become a growing concern. Understanding how urban environments give rise to psychiatric disorders is necessary for informing preventive measures and treatments. While it is not always possible to change our environments, understanding the mechanisms could help to create strategies to lessen or prevent the negative effects of urbanicity.

No conflict of interest

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P.0259
Topic modeling analysis of publications on the psycho-
logical and psychiatric aspects of covid-19 (monthly dynamics in 2020)

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Background: The COVID-19 pandemic has had a significant negative impact on psychological well-being around the world. However, it remains unclear if there are trends in the scientific literature for individual countries in mental conditions in case of COVID-19.

Objective: Topic modeling of publications on the psychological and psychiatric aspects of COVID-19 and comparing the publication activity monthly during 2020 using machine learning.

Methods: Systematic search was carried out for publications on the Pubmed for the period from December 2019 to January 2021 and the selection of those related to the psychological and psychiatric aspects of COVID-19. 3366 abstracts were identified and performed into a text corpus. Topic modeling with Latent Dirichlet allocation was carried out using Python-based machine learning.

Results: 10 main topics identified:

- Topic 1 (Public mental health and behavioral patterns in a pandemic and lockdown) showed rapid growth at the beginning of the pandemic, with publications peaking in February. By May, the proportion of Topic 1 is decreasing and is scarce further.

- Topic 2 (Clinical aspects of coronavirus infection) discussed only in January, November and December 2020. The proportion of Topic 2 among other publications is minimal and does not exceed 0.3%.

- Topic 3 (Organization of medical care and palliative treatment, including telemedicine technologies) occurs in publications in January 2020, and is also discussed from September 2020 to January 2021. The proportion of Topic 3 among other publications is 0.6%.

- Topic 4 (PTSD and burnout of healthcare personnel) is actively discussed in January-March, reveals a significant drop by April and then grows, becoming by the end of 2020 the most discussed topic (about 50% of all publications).

- Topic 5 (Therapeutic and scientific activities of various medical fields in the context of COVID-19) discussed every month. Since the beginning of the pandemic, there has been a rapid increase in this topic, with a peak in publication activity in February and April 2020, followed by a gradual downward trend.

- Topic 6 (Disinformation and domestic violence in a pandemic) unlike other topics, it decreases sharply with the onset of a pandemic. The reduction and restoration of interest in the topic under discussion is associated with March 2020, with the subsequent preservation of topic 6 at the level of 20% among all publications.

- Topic 7 (Personal protective equipment and panic shopping in a pandemic) was discussed in publications for January, April, June, September - December 2020 and January 2021, but the proportion is small and varies from 0.2 to 2.2%.

- Topic 8 (Anxiety disorders, eating-disorders) occurs throughout the entire analyzed period, with the exception of February 2020, with a maximum representation in March 2020 and a further gradual decrease in the share value of the topic under discussion.

Conclusion: When analyzed by month, the two most discussed topics were burnout among healthcare workers and the functioning of related areas of medicine in a pandemic. The discussion of these topics is reciprocal in nature - in the first months, the functioning of related fields of medicine was discussed more intensively, while by the end of 202, the discussion of professional burnout came to the fore.

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P.0260
Optimising a human induced pluripotent stem cell system to model the effects of IL-6 on early neurodevelopment

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The mechanisms by which maternal immune activation (MIA) increases the risk for neuropsychiatric disorders are unclear [1]. Data from rodent studies implicate the release of inflammatory cytokines and chemokines from activated microglia as one potentially important mechanism [2]. Of these, interleukin (IL)-6 is of special interest since it may be considered a sensor, effector and transducer of MIA in rodents and recently, humans [3]. Much of our knowledge about microglial function is however informed by studies of mouse microglia, yet there are important species differences between murine and human microglia. Generation of specific cell types, including microglia, from human induced pluripotent stem cells (hiPSC) offer one means to address this gap in our knowledge. Whilst studies on the effects of specific cytokines on neurons differentiated from hiPSC have already yielded important insights in MIA neurobiology [4], studies on non-neuronal cells including microglia have yet to be conducted. We therefore generated microglia-like cells (MGLs) from hiPSCs that closely recapitulate human foetal microglia ontogeny [5] to study the impact of IL-6 stimulation on their form and function. hiPSC-derived MGLs were differentiated from n=3 healthy male donors, using n=3 independent clones per donor as biological replicates [5]. Using MGL monocultures, we characterised temporal changes in microglia marker and cytokine receptor expression and the response of MGLs to IL-6 by immunocytochemistry (ICC), qPCR and immunoblotting. At 1 (MGL-progenitors) and 14 (mature MGLs) days of differentiation from myeloid factories, cells were fixed for ICC or RNA harvested. Secondly, following exposure to 100ng/ml of hu-