

## **An Editorial-Approach Perspective on some of Our Preliminary Data Regarding the Neuropsychiatric and Gastrointestinal Manifestations in Covid-19**

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### **Abstract**

Considering the previous experience of our group in studying both the neuropsychiatric disorders, as well as the gastrointestinal ones, and the interaction between these type of manifestations, and also having in mind the current COVID-19 pandemics, in the current short editorial we will focus our attention on describing very briefly some of our preliminary data regarding the neuropsychiatric and gastrointestinal manifestations in COVID-19.

**Keywords:** *Covid-19*, neuropsychiatric, gastrointestinal.

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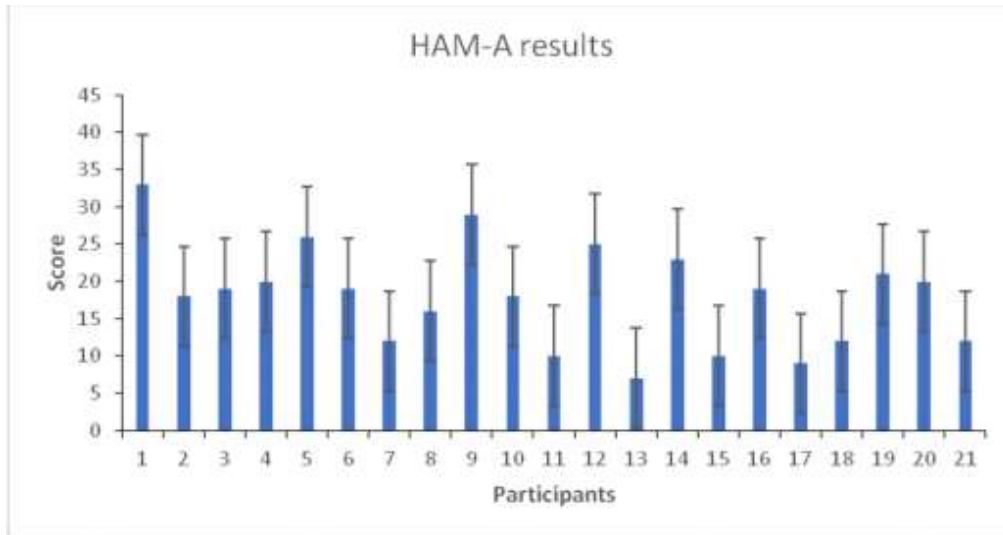
### **Introduction**

Thus, considering the ever-growing importance in understanding the mecanistics behind the current COVID-19 pandemics, and our previous experience in studying both the neuropsychiatric disorders, as well as the gastrointestinal ones, and the interaction between these types of manifestations we concentrate our attention here on some of our preliminary data regarding the neuropsychiatric and gastrointestinal manifestations in COVID-19.

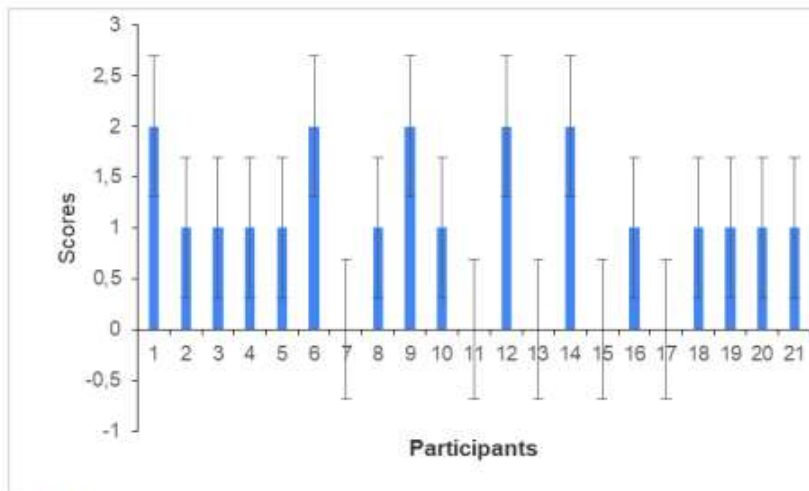
We previously showed on numerous occasions that the brain-gut axis and the so-called “second-brain” from the gut are very well correlated to most of the neuropsychiatric disorders [1-10].

Thus, in one of first preliminary attempts to better understand or to speculate on the neuropsychiatric and gastrointestinal manifestations associated with COVID-19, we used a group of volunteers, on which we studied if there were any “correlations between anxiety levels, gastrointestinal manifestations and social isolation following the lockdown due to this specific coronavirus outbreak in Romanian students”[11].

Our data back then in the spring showed that there were particular anxiety-related manifestation associated with the lockdown situation, and even more, these were correlated with a specific series of gastrointestinal manifestations (Figure 1- as taken from our original manuscript) [11]:



HAM-A results. The results of a number of 21 participants with a mean score of 18 and a standard deviation



Gastrointestinal symptoms. Score given by participants regarding gastrointestinal symptoms, lowest score being 0 (absent symptoms) and highest 2 (moderate symptoms).

**Figure 1.** Anxiety and gastrointestinal related manifestation in our selected volunteers during the pandemics lockdown.

Similar aspect were actually also previously demonstrated in areas or countries such as China , Hong Kong or Jordan [12-14].

Following that, the attention of our group focused on a specific scale (VAS-IBS scale) for studying the most important functional digestive disorder, which is considered to be the Irritable Bowel Syndrome (IBS), by also using a number of volunteers that were infected with COVID-19 and establishing the correlations that might exist between the viral pathology and their subsequent digestive manifestations [15 – in press].

Although our specific data was not published yet, we can certainly say that COVID-19 infection resulted in a significant alteration of constipation, abdominal pain, bloating, vomiting processes and the related emotional status, as measured by the specific VAS-IBS scale [15 – in press].

In fact, previous authors described IBS-like manifestations in COVID-19 infection [16, 17].

It also seems that mechanistically, some manifestations resemble the pathology of IBD, Reiter’s syndrome or Guillain-Barre syndrome [18-20].

It is also worth mentioning in this context, that in a computational and modern mathematical approach our group also did some preliminary and speculative studies on “Forecasting the Spreading of COVID-19 across Nine Countries from Europe, Asia, and the American Continents Using the ARIMA Models” [21] and predicting in the summer of 2020 the epidemiological evolution of COVID-19 spreading in countries such as Ukraine, Romania, the Republic of Moldova, Serbia, Bulgaria, Hungary, USA, Brazil, and India [21].

Also, in the same context, we were also interested in “Testing the Accuracy of the ARIMA Models in Forecasting the Spreading of COVID-19 and the Associated Mortality Rate” [22], by following the complex mathematical and computational models that could further explain and predict some epidemiological aspects of this pandemic situation (for example we also did focus on the total number of patients hospitalized in ICU), especially since for example this specific ARIMA technique was also previously used in the last years for malaria, tuberculosis influenza, brucellosis and other important similar disorders [23-29].

In addition, in a more therapeutical-related approach, our group described and focused in the summer of 2020 on the relevance of vitamin B3 in the context of COVID-19 [30], considering also the possible implications of the oxidative stress status in this SARS-CoV-2 infection [31].

### **Conclusions**

Thus, as suggested from this preliminary data, we can further speculate that there is indeed a possible neuropsychiatric and gastrointestinal background/correlation in COVID-19 pathological manifestations.

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