A. Medicine and Health

July 30, 2020 (Infection)
Prognostic value of serum amyloid A in patients with COVID-19
Li Cheng, Jian-Zhong Yang, Wen-Hui Bai et al.
https://doi.org/10.1007/s15010-020-01468-7

The authors investigated the prognostic value of serum Amyloid A (SAA) in patients with laboratory confirmed COVID-19 patients. They collected data from 89 patients and divided them into survival group and non-survival group. The SAA levels of all patients were recorded and compared on 1 day after admission (before treatment) and 3 days, 5 days, and 7 days after treatment. They found that SAA can be used as a predictor of the prognosis in patients with COVID-19.

July 29, 2020 (JAMA Network Open)
Comparison of Face-Touching Behaviors Before and During the Coronavirus Disease 2019 Pandemic
Yong-Jian Chen, Gang Qin, Jie Chen et al.
https://doi.org/10.1001/jamaneurol.2020.16924

This cross-sectional study examines mask wearing and face-touching behaviors before and during the coronavirus disease 2019 (COVID-19) pandemic in China, Japan, South Korea, Western Europe, and the US.

July 28, 2020 (Infection)
Pulmonary function in patients surviving to COVID-19 pneumonia
Alessia Fumagalli, Clementina Misuraca, Achille Bianchi et al.
https://doi.org/10.1007/s15010-020-01474-9

The authors studied the respiratory function of 13 confirmed COVID-19 patients at the time of clinical recovery and 6 weeks after discharge in patients surviving to COVID-19 pneumonia. They found that patients with COVID-19 pneumonia may have clinically relevant alterations in pulmonary function tests, with a mainly restrictive pattern.

July 28, 2020 (Infection)
Cardiac manifestations of COVID-19 in Shenzen, China
Jia-Hui Zeng, Wei-Bo Wu, Jiu-Xin Qu et al.
https://doi.org/10.1007/s15010-020-01473-w

The authors compared clinical and echocardiographic characteristics of 416 confirmed COVID-19 inpatients in the intensive care unit (ICU) and non-ICU patients. They found that myocardial injury marker elevation, ventricular wall thickening, pulmonary artery hypertension, and cardiac complications including acute myocardial injury, arrhythmia, and acute heart failure are more common in
ICU patients with COVID-19. Cardiac injury in COVID-19 patients may be related more to the systemic response after infection rather than direct damage by coronavirus.

**July 27, 2020 (JAMA Network Open)**
Estimation of Viral Aerosol Emissions From Simulated Individuals with Asymptomatic to Moderate Coronavirus Disease 2019
Michael Riediker, Dai-Hua Tsai
https://doi.org/10.1001/jamanetworkopen.2020.13807

This mathematical modeling study estimates viral aerosol emissions from simulated individuals with asymptomatic to moderate coronavirus disease 2019 (COVID-19).

**July 27, 2020 (Nature)**
Longitudinal analyses reveal immunological misfiring in severe COVID-19
Lucas, C., Wong, P., Klein, J. *et al.*
https://doi.org/10.1038/s41586-020-2588-y

The authors serially analysed immune responses in 113 COVID-19 patients with moderate (non-ICU) and severe (ICU) disease. Immune profiling revealed an overall increase in innate cell lineages with a concomitant reduction in T cell number. The authors identified development of a maladapted immune response profile associated with severe COVID-19 outcome and early immune signatures that correlate with divergent disease trajectories.

**July 24, 2020 (Science)**
The impact of COVID-19 and strategies for mitigation and suppression in low- and middle-income countries
Patrick G. T. Walker, Charles Whittaker, Oliver J. Watson *et al.*
https://doi.org/10.1126/science.abc0035

The authors combine data on demography, contact patterns, disease severity and health care capacity and quality to understand the impact of COVID-19 and inform strategies for its control.

**July 23, 2020 (NEJM)**
Multisystem Inflammatory Syndrome in U.S. Children and Adolescents
Leora R Feldstein, Erica B. Rose, Steven M. Horwitz *et al.*
https://doi.org/10.1056/NEJMoa2021680

This report describes the epidemiology and clinical course of patients younger than 21 years of age from 26 states in USA who had multisystem inflammatory syndrome. Many were infected with SARS-CoV2 at least 1 – 2 weeks before syndrome onset. The median age of the patients was 8.3 years, and 73% were previously healthy.

**July 18, 2020 (European Radiology)**
From community-acquired pneumonia to COVID-19: a deep learning–based method for quantitative analysis of COVID-19 on thick-section CT scans
In this retrospective study, an AI system was developed to automatically segment and quantify the COVID-19 infected lung regions on thick-section chest CT images. The authors found that this system can accurately quantify the COVID-19-associated lung abnormalities and assess the disease severity and its progressions.

B. Science and Engineering

Oct 15 2020 Science of the Total Environment
Spatial analysis and GIS in the study of COVID-19. A review
Ivan Franch-Pardo, Brian M. Napoletano, Fernando Rosete-Vergesa et al
https://www.sciencedirect.com/science/article/pii/S0048969720335531

The authors review data processed with GIS and spatial statistics in COVID-19 in order to understand and help us to make informed decision. The geographical information such as spatiotemporal dynamics of population and health geography data are interdisciplinary approaches in the study of COVID-19.

Aug 4 2020 Physics of Fluids
The dispersion of spherical droplets in source–sink flows and their relevance to the COVID-19 pandemic: Physics of Fluids
C. P. Cummins, O. J. Ajayi, F. V. Mehendale et al
https://aip.scitation.org/doi/10.1063/5.0021427

This is a great physics paper. The authors investigate the dynamics of spherical droplets in the presence of a source–sink pair flow field. They use the Maxey-Riley equation to study the dynamics of the droplets. Interesting findings: small droplets cannot go further than a specific distance. Larger droplets can travel further from the source before getting pulled into the sink. The findings that such droplets have a very short range could help scientists in the interpretation of existing data on droplet dispersion. Further research is expected to shed more light in our understanding of this very important droplet dispersion phenomenon.

July 2020 Infectious Disease Modelling
Generalized logistic growth modeling of the COVID-19 pandemic in Asia
Elinor Aviv-Sharon, Asaph Aharoni
https://www.sciencedirect.com/science/article/pii/S2468042720300270

The authors report a modeling approach using the generalized logistic model (GLM) to predict the outbreak spreading potential and the pandemic cessation dates in Chinese mainland, Iran, the Philippines and Chinese Taiwan. The short-term predicted number of cumulative COVID-19 cases matched the confirmed reports of across the four countries and regions. They suggest that GLM as a valuable tool for
characterizing the transmission dynamics process and the trajectory of COVID-19 pandemic.

C. Social Sciences, Humanities and Public Policy

Oct 2020 Data in Brief
Economic Resilience Dataset in Facing Physical Distancing During COVID-19 Global Pandemic
Muhammad Fitri, Rahmadana Gaffar, Hafiz Sagala
https://www.sciencedirect.com/science/article/pii/S235234092030963X

Note that this is a “Data Article”.
In reporting their study of physical distancing data in Indonesia the authors state that in order to make the data more informative, researchers conducted a descriptive statistical analysis, ANOVA, Kruskal Wallis, and the Spearman’s Rank correlation. They go on to say that “analysis of the data provides valuable information related to the interrelation of each item and the pattern of economic resilience that the urban city household has as a consequence of the COVID-19 global pandemic”. Unfortunately, the article provides little descriptive analysis and the reader is left to interpret the results tables to determine whether the authors are correct in their assertion.

Oct 2020 Technological Forecasting and Social Change
Misinformation sharing and social media fatigue during COVID-19: An affordance and cognitive load perspective
A.K.M. NajmulIslam, Samuli Laato, Shamim Talukder et al
https://www.sciencedirect.com/science/article/pii/S0040162520310271

Data was collected from young adults in Bangladesh (N = 433). The results show that people who are driven by “self-promotion and entertainment”, and those suffering from “deficient self-regulation”, are more likely to share unverified information.
“Exploration” and “religiosity” correlated negatively with the sharing of unverified information. However, exploration also increased social media fatigue. The authors state their findings indicate that the “different use purposes of social media introduce problematic consequences, in particular, increased misinformation sharing”.

Oct 2020 Safety Science
Does culture matter social distancing under the COVID-19 pandemic?
Toan Luu Duc Huynh
https://www.sciencedirect.com/science/article/pii/S0925753520302691

This is another article that would have benefitted greatly from improved editing. It concludes that the study confirms the finding from Borg (2014) and Gaygisizet et al (2017) that cultural determinants play an important role in controlling infection behavior. They suggest core cultural values relevant to potential threats are embedded to nudge people to avoid social gathering under the COVID-19 pandemic.
The authors recognize they have provided no more than a sketch of the key components of an economically feasible set of ecological pandemic prevention strategies. Limits on the availability of information limit the ability to conduct a more exhaustive analysis. Instead, readily available information was tallied to evaluate how likely it is that an investment of the costs of pandemic prevention would yield positive net benefits to the world.

The authors analyse how the scientific community responded to the pandemic by quantifying distribution and availability patterns of the academic information. They aim to assess the quality of the information flow and scientific collaboration. Publication rate and publication status, affiliation and author count per article, and submission-to-publication time were analysed. They report the generation of a large amount of scientific data, potential problems regarding the information overload, distribution and scientific collaboration. They advocate more efficient use of data, transparency and the adoption of the Open Science concept.