SARS-COV-2 IN ROMANIA: EPIDEMIOLOGY, TRANSMISSION DYNAMICS, AND RELATED PERCEPTIONS

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ABTRACT

This paper aims to analyse the impact of SARS-CoV-2 in Romania, focusing on the social and epidemiological dynamics of the pandemic. In this sense, it explores how the COVID-19 support groups on the social networking platform Facebook evolved during the pandemic, highlighting the changes that occurred both in the interactions and public discourse, as well as in the needs of individuals. In addition, the thesis analyses the potential of the Facebook platform as a crowd-generated data collection tool, presenting a demonstrator developed with the aim of analysing the dynamics of SARS-CoV-2 specific antibodies using the collected data and, implicitly, providing additional insight into the immune responses of individuals after vaccination or infection.

The thesis also presents a model to predict the evolution of the number of cases of SARS-CoV-CoV-19 based on an indicator derived from public crowdedness data reported by Google through its "Popular Times" function. This approach emphasises the potential of crowdsourced data sources not only as tools to predict the course of pandemics, but also to guide public health decisions. The developed model is then compared with a SEIR and a machine learning-based epidemiologic model, highlighting the advantages and limitations of each approach.

The results presented demonstrate the importance of using social networks as well as other unconventional data sources to improve health strategies in the context of global epidemiological crises.

KEYWORDS: crowdsourcing, antibody dynamics, social media analytics, covid-19 forecasting, public health data;