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DSI-NRF Centre of Excellence in Epidemiological Modelling and Analysis

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The DSI-NRF Centre of Excellence in
Epidemiological Modelling and Analysis
invites you to a seminar by

Christophe Maxime Fokoua Dongmo, MD, MSc

*The spread and burden of the early phases of the
COVID-19 pandemic in sub-Saharan Africa: comparison
between predictions and actual data and lessons learned*



25 November 2022

15h00 SAST

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Abstract

Introduction. Sub-Saharan Africa (SSA) was predicted to be severely affected by the coronavirus disease 2019 (COVID-19) pandemic, but the actual data seem to have contradicted these forecasts. This study attempted to verify this observation by comparing predictions against actual data on the spread and burden of the early phase of the COVID-19 pandemic in SSA.

Methods. Focused on the period from March 1st to September 30th, 2020, we compared (1) the predicted interval dates when each SSA country would report 1 000 and 10 000 COVID-19 cases, to the actual dates when these numbers were attained, as well as (2) the daily number of predicted versus actual COVID-19 cases. Further, we calculated the case fatality ratio of the COVID-19 infection in SSA, and the correlation coefficient between the weekly average number of confirmed COVID-19 cases reported by each country and the weekly average stringency index of its anti-COVID-19 policy measures.

Results. 84.61% (33) and 100% (39) of the 39 SSA countries for which predictions were made did not reach a total of 1 000 and 10 000 confirmed COVID-19 cases at the predicted interval dates. The daily number of confirmed COVID-19 cases was lower than the one projected for all SSA countries. The case fatality ratio of the COVID-19 infection in SSA was 3.42%. Among the 44 SSA countries for which the correlation could be estimated, it was negative for 17 (38.6 %) of them.

Conclusions. The natural characteristics of SSA and the public health measures implemented might partly explain that the actual data were lower than the predictions on the early phase of the COVID-19 pandemic in SSA, but the low case ascertainment and the numerous asymptomatic cases did significantly influence this observation.

Keywords: COVID-19 pandemic, early phase, sub-Saharan Africa, comparison, predictions, actual data.



Short Biography

I am Christophe Maxime Fokoua Dongmo, I am a medical doctor (general medical practitioner) with a Master of Science (MSc) in Epidemiology and currently a PhD candidate in Epidemiology at the University of New York State - University at Albany School of Public Health. In addition, I work as Data Administrator in the Office of Primary Care and Health Systems Management of the New York State Department of Health.

My deep love for health sciences was triggered by a very tragic event: the sudden passing of my father in 1995 after a massive heart attack. At the time I made the oath to do anything I could to prevent other children from experiencing the indescribable pain of losing one's father. To that end, I became eager to understand all the mechanisms of the human's biology. This led me to pursue a medical curriculum at the University of Yaoundé 1 Faculty of Medicine and Biomedical Sciences where I obtained my MD degree in general medicine in 2012. My 3 years of post-graduate medical practice especially my experience working with diabetic and hypertensive patients opened my eyes to the importance of understanding the causes of diseases to be able to use that knowledge to prevent them. This ignited my interest in public health, and I applied to the University of New York State - University at Albany School of Public Health where I obtained my MSc in Epidemiology in 2017. My strong drive for epidemiologic methods and my deep interest in statistics motivated me to pursue a PhD curriculum in Epidemiology where I'm now completing my dissertation.

My academic endeavors have been complemented by my work experience in public health. First, as a general medical practitioner in my home country Cameroon - where there is a scarcity of health professionals - I had the opportunity to lead public health prevention and intervention activities, and I also acted as physician scientist on international research projects. Further, in the different positions I have held at the Albany County Department of Health and at the New York State Department of Health, I have had the opportunity to strengthen my skills in study design and implementation, data analysis and management, data quality assurance, program evaluation, grant and report writing, manuscripts publication, and conferences presentations, among others.

My ultimate career goal is to put together my medical and public health knowledge to build a skilled public health workforce which will efficiently utilize core epidemiologic principles to improve the health of populations in developing countries where infectious and non-communicable diseases are rampant and healthcare access is limited.