

Mathematical Methods and Models in Biosciences

June 18-23, 2023, Pomorie, Bulgaria

<https://biomath.math.bas.bg/biomath/index.php/bmcs>

An obesity and COVID-19 co-infection model

Keamogecoe Modise

University of Johannesburg, South Africa

keamogecoem@gmail.com

Despite its rapid growth and having now reached endemic levels, obesity continues to grow at an alarming rate globally. Obesity is known to be an epidemic currently and we wish to model the evolution of obesity prior to, and now especially during the current COVID-19 times. The advent of COVID-19 resulted in increased deaths for the obese globally. We assess a dual-infection SEIR model with hospitalization and no cross-immunity. The results presented are key to understanding how the emergence of COVID-19 impacted already existing epidemics. The potential of such findings in quantifying the impact of future pandemics on existing epidemics is immense.