Abstract

The study will examine the dynamics of novel Corona virus disease (Covid-19), particularly a contagious viral infection which has killed millions of people worldwide. The virus spreads from person to person through direct or close contact if the precautions are not being fulfilled. We proposed an SEIHR model consisting of nonlinear ordinary differential equations to analyze the dynamics and to characterize the stability analysis of Corona disease in the human population. For this purpose, the threshold parameter is computed for the dynamical system just to handle the dynamics of the disease. We have proved several fundamental properties of the model such as positivity and boundedness of solutions. Furthermore, the stability of the model at two main equilibrium points (DFE and EE) is investigated. Both equilibrium points are locally and globally asymptotically stable under the conditions applied to the threshold parameter, with the global stability proven using Lyapunov's function theory. We employed the RK4, Euler and NSFD numerical techniques to solve the epidemic model. A detailed numerical analysis of the projected model is performed to observe Covid-19 dynamics. All the simulations are performed in Matlab.