Review of: "Qualitative Analysis of a Time-Delay Transmission Model for COVID-19 Based on Susceptible Populations With Basic Medical History"

Rooh Ali[1]

1 Government College University Faisalabad

Potential competing interests: No potential competing interests to declare.

Review Report on: Qualitative Analysis of a Time-Delay Transmission Model for COVID-19 Based on Susceptible Populations With Basic Medical History

The paper presents a nice work. The authors have conducted a thorough qualitative analysis of a time-delay transmission model for COVID-19, focusing on susceptible populations with basic medical history. The study provides valuable insights into the dynamics of the disease spread and its impact on susceptible individuals. The research methodology employed in this paper is robust, and the findings contribute to our understanding of how various factors such as medical history can influence the transmission rates. Overall, this work adds significant value to the existing literature on COVID-19 modeling and highlights the importance of considering The following major changes are recommended to improve the quality of the work

01. The paper needs to be improved for the English language.
02. The abstract is more general. Please revise it as per your findings.
03. Your method of solution is very unclear, provide a detailed algorithm on how you arrive at the solutions presented in Section 6 should be given. Bear in mind that the submission is made to the Journal of Mathematics.
04. Parameters estimations is very unclear, provide the method which you use to calculate unknown parameters. (e.g., in Figure 1 the rate of change from E to I is very unclear, how you choose that?)
05. The majority of the equations are not punctuated and numbered.
06. Positivity, feasibility, existance, uniqueness of the solutions are not provided, add these results.
07. In the Section 5 the author is telling about the usage of MATLAB software, please explain in detail if you make your own program or use in built function (e.g., ode45...etc) explain it in detail. Next you write initial conditions and parametric values, that good but please make a table for these information and cite seperate source papers from which you use values.
08. Revise the conclusion of the paper and highlight future continuation of the study.
09. Authors are advised to carefully look into the manuscript for grammatical, typos, and punctuation. For example, system (1) last equation $R'=\gamma I-dR$, should have ‘full stop’ instead of ‘comma’. In system (2), the last equation should have a ‘full stop’. Likewise, authors need to correct them in all other places.

10. MATLAB codes used to verify results should be included at the end of the paper.