

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

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Potential competing interests: No potential competing interests to declare.

Review:

This paper presents a time-delay transmission model for COVID-19 based on the SEIR epidemic model. The authors introduce time delay and analyze the basic reproduction number of the transmission model. They also investigate the existence and global stability of equilibrium points using the Lyapunov function and the LaSalle invariance principle. Numerical simulations are conducted to validate the theoretical findings, and the impact of different time delays on the spread of COVID-19 is discussed.

Overall, this paper provides a comprehensive analysis of the COVID-19 transmission model with time delay. The theoretical results are supported by numerical simulations, enhancing the credibility of the findings. The use of the Lyapunov function and the LaSalle invariance principle adds rigor to the stability analysis of equilibrium points.

However, there are a few points that could be further addressed:

1. How are the time delays incorporated into the model? Are there specific assumptions or considerations made regarding the nature of these delays?
2. Could the authors discuss the practical implications of their findings? How can the insights gained from this study contribute to the development of more effective prevention and control strategies for COVID-19?
3. In terms of future research, what are some potential directions or extensions that could build upon the findings of this study? Are there any limitations in the current model that could be addressed in future work?

Overall, this paper provides valuable insights into the impact of time delays on the spread of COVID-19. Addressing the above questions would further enhance the understanding and practical relevance of the research.