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| Journal Name: | [**Asian Journal of Probability and Statistics**](https://journalajpas.com/index.php/AJPAS) |
| Manuscript Number: | **Ms\_AJPAS\_137983** |
| Title of the Manuscript: | **A cardiovascular disease mathematical model Incorporating personal risk factors** |
| Type of the Article |  |

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| **PART 1: Comments** | | |
|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This manuscript offers a valuable contribution to public health modeling by developing and analyzing a deterministic mathematical model that incorporates personal risk factors into the dynamics of cardiovascular disease (CVD). Given the growing global burden of CVD, the inclusion of modifiable personal behaviors—such as diet, exercise, and smoking—into a mathematical framework provides a novel way to quantify and potentially guide preventive strategies. The model uses rigorous analytical tools (e.g., next generation matrix, Routh-Hurwitz criteria, Lyapunov functions) and numerical simulations to demonstrate both local and global stability, offering clear implications for public health policy. The work is especially important in the context of shifting attention  from curative to preventive healthcare. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **The title is broadly appropriate but could be made more concise and professional with correct capitalization and phrasing.**  **I would Suggest the below title**  **“A Mathematical Model of Cardiovascular Disease Dynamics Incorporating Personal Risk Factors”** |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | **Consider briefly stating the key findings of the simulation to make the abstract more informative.**  **The term “Cardiovascular infection” is incorrectly used in several places; CVD is not an infectious disease and should be referred to appropriately (e.g., "cardiovascular disease progression").** |  |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript is **scientifically correct** in its formulation and application of mathematical modeling techniques. The mathematical methods and their interpretations are consistent with established practices in epidemiological modeling. The simulations align with theoretical expectations.  However, calling cardiovascular disease an “infection” throughout the paper is a **scientific misrepresentation**  and needs correction throughout the manuscript. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | Add a few more recent references that deal with non-communicable disease modeling or specifically cardiovascular disease dynamics in public health modeling frameworks. |  |
| **Is the language/English quality of the article suitable for scholarly communications?** | 1. Repeated grammatical errors 2. Inconsistent terminology 3. Redundant and unclear phrasing in some places |  |
| **Optional/General** comments | 1. The paper would benefit from a discussion section that relates the mathematical findings more directly to real-world public health implications. 2. Consider including a summary table of parameter values used in simulations. 3. Use consistent notation for variables (some inconsistencies were noted in subscript/superscript usage). 4. Avoid overuse of repetition across the introduction and conclusion. |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

**Reviewer details:**

**Santushti Santosh Betgeri, Vishwakarma Institute of Technology, India**