Review of: "Causality Analysis for Non-Communicable Diseases, Obesity, and Health Expenditure: Toda Yamamoto Approach"

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Potential competing interests: No potential competing interests to declare.

The article demonstrates a strong understanding of the subject matter through a comprehensive and informative introduction. It effectively establishes the rationale for the study by highlighting the significance of investigating the causal relationship between non-communicable diseases (NCDs), obesity, and health expenditure. The study's methodology is commendable, utilizing established econometric techniques and reliable data sources to investigate these relationships. The researchers provide clear explanations of their approach, variables, and statistical analysis, ensuring transparency and reproducibility.

Based on their outcomes, the researchers draw robust conclusions that refute the initial null hypothesis, indicating that obesity is indeed a significant factor contributing to the disease burden and health expenditures. However, they do not reject the first null hypothesis, suggesting that the disease burden alone is not the sole cause of healthcare costs. This analysis of causal models establishes that obesity is causally linked to the disease burden of NCDs and subsequent healthcare expenditures, measured in DALYs (Disability-Adjusted Life Years).

As a professional reviewer, it is crucial to assess the accuracy and relevance of the studies cited in the discussion. Furthermore, considering the broader context of biomedical engineering and healthcare, it may be necessary to conduct further analysis and examination of supporting evidence to fully evaluate the implications of the findings.

In assessing the proposed conclusions, it is important to consider their relevance and feasibility. Evaluating the potential impact of leveraging social media, employing dietitians, and implementing anti-obesity campaigns requires a deeper examination of existing evidence and the effectiveness of such interventions. Additionally, considering the broader context of healthcare systems, policies, and cultural factors is essential for evaluating these proposed strategies' feasibility and potential impact.

Strengths:

1. Comprehensive literature review: The article includes a thorough review of relevant literature on obesity, NCDs, and healthcare costs, providing a well-rounded understanding of the topic.
2. Rigorous statistical analysis: The study employs established econometric techniques and robust statistical tests to analyze the data, enhancing the validity of the study's findings.
3. Global perspective: The article discusses the global impact of obesity and NCDs, incorporating studies from various

countries and broadening the relevance of the research.

4. Implications for health policy: The article recognizes the need for evidence-based health policies and interventions to address the burden of obesity-related NCDs, emphasizing the potential role of predictive simulations, social media, dietitians, and anti-obesity campaigns.

Weaknesses:

1. Limited discussion on limitations: The article lacks an extensive exploration of the study's limitations, such as potential biases or confounding factors, which would enhance the transparency and interpretation of the results.

2. Inadequate explanation of results: While the article presents the results of statistical tests, a more detailed explanation and interpretation of these findings would enhance the understanding of their implications.

3. Lack of specific recommendations: The article mentions the importance of anti-obesity campaigns and incentivization efforts but lacks specific recommendations for implementation or discussion of potential barriers to their effectiveness. More actionable recommendations would increase the practical relevance of the study.