

Comparative Life Cycle Assessment Between Single-Use and Reprocessed IPC Sleeves [Letter]

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Dear editor

We have read a research article entitled “Comparative Life Cycle Assessment Between Single-Use and Reprocessed IPC Sleeves” by Lichtnegger et al,¹ recently published in Risk Management and Healthcare Policy Journal. We congratulate the authors on this successful article and make some contributions. There are seven strengths of this study: 1) This study used the Life Cycle Assessment (LCA) method to compare the environmental footprint of single-use and reprocessed IPC sleeves, 2) This research shows that reprocessed IPC sleeves have an environmental advantage by reducing the overall environmental footprint by 43%, 3) This research provides a more holistic understanding of the environmental impact of healthcare products, enabling decision-making based on environmental criteria, 4) This research shows that reprocessed IPC sleeves can reduce carbon emissions by 40% compared to single-use IPC sleeves, 5) This research identifies key factors that influence environmental impact, such as material use, transportation, and electricity use, 6) This research shows that reprocessed IPC sleeves can also reduce waste and disposal costs generated, 7) Contributed to the understanding of the importance of environmental considerations in the selection of medical devices.

However, we have also discovered several limitations that need to be corrected in the future, namely: 1) This study has limitations in terms of assumptions and uncertainties associated with the Life Cycle Assessment (LCA) method, which requires assumptions and introduces uncertainties, 2) The geographical limitation of the model that only covers North and Central America, so the results cannot be generalized to other geographical regions without inventory adjustments, 3) This study did not break down the results in detail for all impact categories, focusing only on the “Climate Change” category, 4) Limitations in the availability of primary data and/or US-specific data to develop the transportation model.

To obtain better results, we recommend that further research be carried out by 1) Conduct further research by expanding the geographical coverage to cover a wider area, so that the results can be generalized to various regions, 2) Collect more primary data to reduce assumptions and uncertainties in the model, especially related to transportation² and energy use,³ 3) Conduct a detailed breakdown of results for all impact categories, rather than just focusing on one category, to provide a more comprehensive understanding of environmental impacts,^{4,5} 4) Conduct research that compares reprocessed IPC sleeves products with other products in the healthcare industry to gain a broader understanding of environmental advantages, 5) Conduct further analysis related to the economic sustainability of using reprocessed IPC sleeves products, including a thorough cost and benefit analysis.

In conclusion, this study makes a significant contribution by demonstrating that reprocessed IPC sleeves have clear environmental advantages over single-use IPC sleeves, with a 43% reduction in environmental footprint and 40% reduction in carbon emissions. The study also provides a more holistic understanding of the environmental impact of healthcare products, enabling decision-making based on environmental criteria.

Disclosure

There is no conflict of interest related to this communication.

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