

Peer-Review Report

Peer Review of “Beyond Expected Patterns in Insulin Needs of People With Type 1 Diabetes: Temporal Analysis of Automated Insulin Delivery Data”

Darlinton Carvalho

Computer Science Department, Universidade Federal de São João del Rei, São João del Rei, Brazil

Related Articles:

Preprint (arXiv): <https://arxiv.org/abs/2211.07393v1>

Preprint (JMIR Preprints): <http://preprints.jmir.org/preprint/44384>

Authors' Response to Peer-Review Reports: <https://med.jmirx.org/2024/1/e66643>

Published Article: <https://med.jmirx.org/2024/1/e44384>

JMIRx Med 2024;5:e66922; doi: [10.2196/66922](https://doi.org/10.2196/66922)

Keywords: multivariate time series; k-means; clustering; machine learning; temporal patterns; data-driven; OpenAPS; open dataset; type 1 diabetes; insulin needs

This is a peer-review report for “Beyond Expected Patterns in Insulin Needs of People With Type 1 Diabetes: Temporal Analysis of Automated Insulin Delivery Data.”

explained solely by carbohydrates through the performed analysis. While patterns found are auspicious, they still lack scientific rigor and research into correlations and causalities that drive these patterns to truly inspire new research into type 1 diabetes.

Round 1 Review

General Comments

This paper presents a study [1] about temporal patterns in insulin needs for type 1 diabetes. It employs various time series techniques to spot such patterns using matrix profiles and multivariate clustering. The OpenAPS Data Commons dataset, an extensive dataset collected in real-life conditions, was analyzed to discover temporal patterns in insulin needs driven by well-known factors such as carbohydrates and potentially novel factors. The results are limited to disclosing interesting temporal patterns in insulin need that cannot be

Specific Comments

Major Comments

1. The research is well-designed and developed.
2. Although the paper is well written and presents interesting results, it does not comply with the Instructions for Authors of JMIR [2].
3. The discussion and implications are minimal, leaving a more significant contribution to future work.
4. This article [3] is found in multiple publications on the internet.

Conflicts of Interest

None declared.

References

1. Degen I, Robson Brown K, Reeve HWJ, Abdallah ZS. Beyond expected patterns in insulin needs of people with type 1 diabetes: temporal analysis of automated insulin delivery data. *JMIRx Med*. 2024;5:e44384. [doi: [10.2196/44384](https://doi.org/10.2196/44384)]
2. Instructions for authors of JMIR. JMIR. URL: <https://www.jmir.org/content/author-instructions> [Accessed 2024-11-04]
3. Abdallah ZS. Temporal patterns in insulin needs for type 1 diabetes. arXiv. Preprint posted online on Nov 17, 2022. [doi: [10.48550/arXiv.2211.07393](https://doi.org/10.48550/arXiv.2211.07393)]

Edited by Amy Schwartz; This is a non-peer-reviewed article; submitted 26.09.2024; accepted 26.09.2024; published 27.11.2024

*Please cite as:
Carvalho D*

Peer Review of "Beyond Expected Patterns in Insulin Needs of People With Type 1 Diabetes: Temporal Analysis of Automated Insulin Delivery Data"

JMIRx Med 2024;5:e66922

URL: <https://med.jmirx.org/2024/1/e66922>

doi: [10.2196/66922](https://doi.org/10.2196/66922)

© Darlinton Carvalho. Originally published in JMIRx Med (<https://med.jmirx.org>), 27.11.2024. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in JMIRx Med, is properly cited. The complete bibliographic information, a link to the original publication on <https://med.jmirx.org/>, as well as this copyright and license information must be included.