Title: PREDICTION OF ADVERSE OUTCOMES ASSOCIATED WITH AGEING: A DATA-DRIVEN APPROACH

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Keywords:
Biomedical engineering, bioinfomatics and computational biology, elderly people, adverse outcomes, decision support

Abstract

As people age, they may experience adverse outcomes (AOs), such as physical and mental decline, depression, which affect their independence and quality of life (QoL). The application of artificial intelligence can increasingly help healthcare providers to timely address the onset of factors and indicators associated with AOs in elderly people, who can be provided with treatments aimed at delaying the decline related to AOs.

We propose the development of AI/ML approaches to early detect individuals at risk of AOs. By using the publicly available SHARE dataset (The Survey of Health, Ageing and Retirement in Europe [1]), we aim at two main goals: I) to explore AOs and define a suitable approach to detect them earlier, through AI/ML algorithms; II) design, develop, and validate a risk assessment model to achieve prediction of AOs in elderly people.

After a literature search on SHARE's use, we decided to focus on elderly people living in Nordic countries and we selected mental health (MH), loneliness, and depression, assessed using EURO-D scale, as AOs.

Based on this information, we performed data curation on the database, and we obtain in total 144 variables related to AOs but also to cognitive function values and QoL, and 5691 users in three Nordic countries: Finland, Sweden, and Denmark.

The selected data is suitable for applying clustering methods to identify different users' profiles, to assess differences between Nordic countries and the next step will be to develop a tailored risk assessment model for MH and depression, based on QoL.

[1] https://www.share-eric.eu/