ABSTRACT

Methods for Extrapolating in Economic Evaluations of Telehealth Interventions: A Scoping Review

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Background: Economic evaluations of telehealth interventions often lack methodological quality and long-term investigation. When data is not available for the time horizon of relevance, different extrapolation methods can be applied for predicting the long-term costs and effects based on available short-term data. However, the heterogeneity in the extrapolation methods may influence the conclusions of the economic evaluations.

Objective: The aim of this scoping review is to investigate the design and conduct of existing long-term economic evaluations of telehealth interventions using extrapolation methods, and map the methods used for extrapolation.

Methods: This scoping review is conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines. The search is conducted systematically in the electronic databases: Embase (Elsevier), PubMed (National Library of Medicine), EconLit (ProQuest), Web of Science (Clarivate), NHS Economic Evaluation Database (NHS Centre for Reviews and Dissemination) and CINAHL (EBSCO Industries). Moreover, the search is supplemented with a grey literature search in Google Scholar and Citation Chasing of the included studies. The search identified economic evaluations, with at least two alternatives, where one of these was telehealth. The time horizon should exceed 12 months, and with application of extrapolation methods to investigate long-term cost-effectiveness. The last search date was January 23, 2025.

Results: The preliminary results included 57 studies, and identified that the use of simpler extrapolation methods, like *Profiles* and *Constant values*, were used more frequently. Furthermore, transparent reporting of the applied extrapolation methods was often missing, together with sensitivity analyses of both the applied extrapolation methods, and the choice of time horizon.

Conclusion: There is a further need for investigation of the implications of the use of the different methods. Moreover, guidelines for the use of extrapolation methods are needed to ensure transparency in future studies.

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