Methods

To ensure all evidence was identified two targeted literature reviews (TLRs) were completed in addition to a grey literature search. The first TLR searched HTA methods guidelines from national HTA agencies websites across 65 countries, Netherlands, Sweden, Australia, Canada, USA, Japan, and Korea, using the keywords "artificial intelligence", "digital", "health app", "tele", "mhealth", and "wearables". If available, data on the scope and functional classification of DHIs as well as evidence requirements were extracted. Each identified guideline was analyzed with a 12-item checklist based on a EUnetHTA core model with additional criteria (interoperability, data security, and stability/ usability). The first search also updated the search and review by Kolasa et al. by covering the period after 1st December 2019 to 31st July 2022. The second TLR searched PubMed, Scopus, and Web of Science databases using terms "digital health" + "economic" + "evaluation" for the same period as above. The second TLR identified 11 economic evaluation models on DHIs. A majority of studies used CUA (2 used both CUA and CEAs) and Markov models to evaluate the value for money of DHIs.

Results

The first TLR identified 6 DHI assessment guidelines:
- 3 DHI specific HTA guidelines among 12 countries;
- 1 economic evaluation guidelines for LMICs and 2 assessment frameworks all developed by academia.

The 12 countries can be divided into 4 groups, according to whether DHI specific guidelines are available:
- France, Germany, and the UK can have DHI specific guidelines
- Canada, Spain, and USA do not have DHI specific guidelines but have HTA reports on DHIs
- Italy, the Netherlands, and Sweden only have documents discussing the potential opportunities for using DHIs in specific therapeutic areas
- Australia, Japan, and Korea do not have DHIs documents on their official websites

Conclusions

There is a fast-increasing DHI specific assessment guidelines since Dec 2018. While Kolasa et al. found 11 published guidelines over the 21 years from September 1998 to December 2019, our review found 6 including 2 updated version of DHI specific HTA guidelines in France, and the UK and one additional guideline from Germany.

While the volume of economic evaluations of DHIs is growing, challenges remain on the estimation of costs and outcomes of DHIs due to the potential high fixed costs, probable low variable costs and multidimensional characteristics of DHIs benefits.

DHI specific methods guidelines for economic evaluations are urgently needed. The rapid development, distinct features, and complexity of DHI assessment require clinicians, patients, DHIs companies, regulators and payers as well as academia cooperate to establish an appropriate approach for appraising the value of DHIs so that DHIs can benefit all those involved.

References  


Digital Health Interventions: A Review of Economic Evaluation Guidelines From Health Technology Assessment Agencies

Zhou A1,2, Yi Y1
1,2Adelphi Values PROVE, Cheshire, United Kingdom; 2 University of York, United Kingdom

Methods

The method is developed to review of DHIs' development, on specific guidelines to telemedicine results to establish in the period of "economic" found of DHIs. DHI’s development, on the guidelines of CUA Covid assessment, and public health evaluation, the of "wearables", DHIs' functional methods, and guidelines on digital technology, and the best approaches, which involve the of "health" + "economic" + "evaluation" for the same period as above. The second TLR identified 11 economic evaluation models on DHIs. A majority of studies used CUA (2 used both CUA and CEAs) and Markov models to evaluate the value for money of DHIs.

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