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Background

Health technology assessment (HTA) plays a pivotal role in ensuring the efficiency of healthcare systems. Its significance becomes even more pronounced in regions with limited resources, like low and middle income countries (LMICs). The sociopolitical dynamics in these settings introduce unique challenges to the adoption and execution of health technology assessment, unlike the more affluent high-income countries. These challenges include the absence of local data and an insufficient workforce. To address these issues, various tools, frameworks, and guidelines have been developed to streamline the HTA process, making it adaptable to the available resources and overcoming inherent barriers.

Lack of data

Resource constraints

Cultural context

Institutional challenges

Lack of regulatory framework

Data quality

Fig. 1 Main problems of performing HTA in LMICs

Objective

The objective of this research is to identify and compare the HTA tools suitable for low and middle income countries.

Methods

We conducted a noexhaustive literature search in MEDLINE and Embase databases, using a two-block search strategy. The first block focused on LMICs, while the second captured HTA-related terms.

To analyze the identified tools and frameworks, we employed a theoretical comparison method, demonstrated through a narrative comparison. This approach allowed for a thorough evaluation of these resources in the context of LMICs' unique challenges in implementing HTA.

Stage 1

Stage 2

Stage 3

TOOLS IDENTIFICATION

TOOLS ASSESSMENT

DESCRIPTIVE COMPARISON

Fig. 2 Research process

Results

HTA TOOLS

ADAPTATION

HTA de novo

OTHER

Adaptation of generalised HTA or transfer tools for HTA performed in other settings

Tools for performing full HTA for a single technology

Capacity building tools for developing HTA system

Fig. 3 Main categories of identified tools and frameworks

	WHO Best buys	WHO Choice	EUnetHTA transfer toolkit	Systematic review of economic evaluations
Purpose	Generalized list of cost-effective interventions	Modifying generalized HTA to suit local context	Transferring (parts) of already performed HTA	Transferring already performed economic assessments
Advantages	No additional analysis required; based on internationally acclaimed data	CEA can be modified to suit local context	Flexibility of usage as only certain parts might be taken into the account	Resource savings if the comparable assessment was already performed
Disadvantages	Lack of adaptation for local context	Specialized training required	Possible limited perspective	Required high expertise

Fig. 3 Adaptation and generalized HTA tools comparison

KNOW ESSENTIALS

(Hospital based) Mini-HTA

Stand alone cost effectiveness analysis

Multi criteria decision analysis

Integrate

Fig. 4 Tools for creating a new health technology assessment

	KNOW ESSENTIAL	INTERGRATE	CEA	MCDA	mini-HTA
Purpose	Context specific assessment in a resource-constrained setting	Complex HTA assessment	Economic assessment of effectiveness	Holistic evaluation of chosen relevant criteria	Rapid assessment of limited scope
Advantages	Transparency; little to no training required; stakeholders engagement required	Rigorous assessment; stakeholders engagement required	Widely-used method; limited complexity	Incorporating local context; stakeholders' perspective taken into account; includes priority setting	Fast and easy to perform; can be performed on the hospital level
Disadvantages	Priority setting is not incorporated	Complexity of the data required	Possible limited perspective	Complexity of identification and weighting of criteria	Limited scope of use; Potentially subjective

Fig. 5 Comparison of chosen tools

Discussion

Two main themes of identified tools emerged from our research, each with distinct characteristics and implications for healthcare systems in LMICs.

Adaptation of General Assessments

The adaptation of existing general assessments, such as WHO CHOICE, offers a pragmatic approach for LMICs. These tools have the advantage of building on established methodologies and data sources, which can save time and resources.

Performing De Novo Assessments

De novo assessments, while resource-intensive and time-consuming, empower LMICs to generate data and evidence that are directly relevant to their healthcare landscape. This inspiring method enables better-informed decisions and more targeted interventions.



Conclusion

The clear comparison of the tools and methodologies can facilitate appropriate choice of the tool taking into account the values, availability of information, resources and level of complexity.

Within these two overarching themes, it's crucial to consider the complexity and resource requirements associated with each framework. Some tools may demand extensive data collection, expert involvement, and financial investments, while others may be more straightforward and cost-effective.

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