

Systematic review of prioritization criteria for topics of HTA projects: suggestions for Iran

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ABSTRACT: Background: Despite a lot of number of HTA topics, the available resources for evaluating all health technologies are limited. Therefore, priorities have to be set. Regarding the need to prioritize based on clear principles and criteria, this study aimed to propose priority setting criteria for topics of HTA projects for Iran. **Methods:** This study was a systematic review of literature. An electronic literature search was performed across EMBASE, Pub Med and Google Scholar in English language in the time interval of December 2013 and January 2014. A questionnaire also was sent through email to the 20 members of Euro Scan. All the selected studies and the opinions of Euro Scan members were reviewed exactly, and the main concepts including the priority setting criteria were extracted. **Results:** Findings from 34 selected studies of the systematic review and the opinions of 6 members of Euro Scan indicated that there are differences in the priority setting criteria for topics of HTA projects among different agencies. Also, 49 Criteria for priority setting of topics of HTA projects were identified and divided in 5 categories. **Conclusion:** Due to resource constraints, and in order to clear prioritization of topics of HTA projects, and efficient allocation of resources, most frequent Criteria were proposed for use in the Iran's Ministry of Health based on the selected studies of systematic review and opinions of Euro Scan members.

Keywords: Priority setting, Health technology assessment, HTA, Criteria.

INTRODUCTION

Development and application of health technologies have created a great challenge for all health systems. Decision making particularly selection of expensive technologies should be evidence based due to restriction of resources in the health sector (1).

Therefore, some tools and techniques that support decision-making and policy-making in the health field have emerged in order to make informed decisions and to clarify possible consequences of adopting a technology or the consequences of choosing one option. Many countries have been devised mechanisms for the rational use of these technologies. The common approach is health technology assessment. Health technology assessment contains complete and organized evaluation of all necessary conditions for the use of health technologies, and the results and consequences of that use (2).

To date, only a part of the health technologies have been evaluated and more new technologies will be accepted continuously without evaluating. Due to the large number of potential health technologies to be assessed, no country has enough resources to do all these assessments. Therefore, priority setting is essential (3).

Priority setting is a complex interaction and there is little consensus on the best way to do it. Developing countries are not only facing the problem of resource constraint but also they have social values and special features (properties) that affect the criteria by which priorities are defined (4). After deciding about the need to priority setting and the mechanisms used for that, the next decision must be made about the shape or structure of prioritization. Few studies on priority setting performed in developing countries indicated the imbalance between criteria that priority setting is based on and criteria that priority setting should be based on (5).

In this respect, the institutions that have been formed in many countries to determine the basic principles of priority setting had little impact on priority setting policies in their countries, and they have just applied sets of standards and principles to solve the complexity of priority setting without a clear framework (6). One of the Findings of a study conducted by Martin et al about priority setting of new cancer drugs in Canada showed that priority setting should be based on a clear framework. There is also a lack of consensus about priority setting criteria, the way that they should be weighted and even the definition of fundamental principles related to this. Therefore, decision makers should struggle to prioritize new health technologies based on transparent principles. To do this, it is essential to determine the criteria for prioritizing new health technologies and their related weights (7).

Like many developing countries, the process of priority setting and its criteria in Iran's health care system is not so transparent and explicit (8) and despite the efforts that have been made in the field of priority setting of HTA projects, there is not a documented procedure to show that what criteria are used and how these criteria are weighted and scored. According to mentioned statements and the need for prioritizing the topics of HTA projects, this study was done to propose the priority setting criteria of topics of HTA projects in Iran.

MATERIALS AND METHODS

This study was a systematic review of literature of related documents to priority setting of HTA projects. To achieve the related documents, electronic search was done across Google scholar, Pub med, and EMBASE (Elsevier) in English language without time limitation. Search was performed in the time interval of December 2013 and January 2014. All possible combinations of keywords that were searched for relevant studies are listed as below:

Priority setting " AND HTA- Priority setting " AND Health technology assessment "- Priority setting " AND technology assessment "- Priority setting " AND Health technology "- HTA AND prioritization- HTA AND topic selection "- Topic Identification " AND Health technology assessment "- Topic Identification " AND technology assessment "- Topic Identification " AND Health technology "- Topic selection " AND Health technology assessment "- Topic selection " AND technology assessment "- Topic selection " AND Health technology "

To complete the extracted data from the systematic review, an electronic questionnaire was sent to the members of Euro-scan (an international network of information on new and emerging health technologies). The questionnaire asked about the criteria used for priority setting of HTA topics. After completing the search, and removing the studies with unrelated and duplicate titles, 71 studies were reviewed on the basis of abstract. As a result of reviewing the abstracts, 37 studies were excluded due to lack of inclusion criteria. All the studies that had explanations about priority setting of HTA projects have been selected. Finally, 34 eligible studies for systematic review were selected. The steps to reach these studies were shown in the figure 1.

Then selected studies were reviewed and their key concepts and themes were identified and a summary of the most important issues related to the priority setting criteria of topics of HTA projects were then extracted of the documents. Finally, all the studies were compared together and the most frequent criteria extracted from the selected studies and the responses of Euro Scan members were suggested for the application in prioritization of topics of HTA projects in Iran.

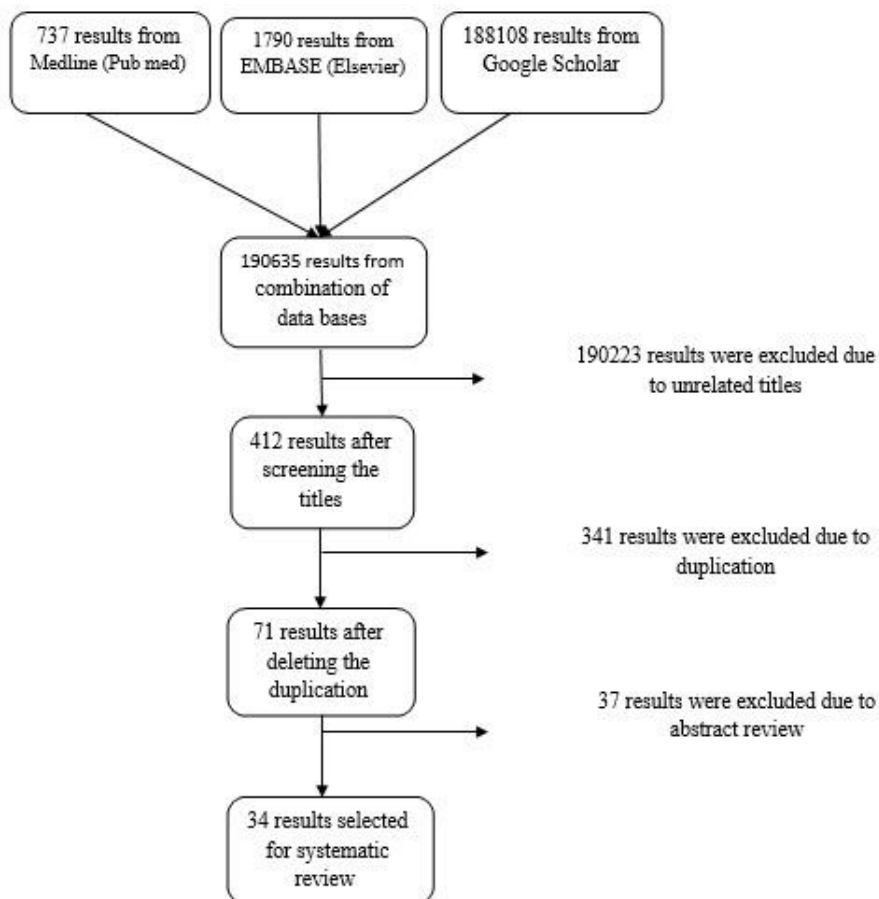


Figure 1. Process of searching in the internet databases

RESULTS AND DISCUSSION

Results

In this study 34 selected studies that explained in whole or in part on priority setting criteria were studied. Opinions of 6 members of Euro Scan that responded to the questions were also analyzed. The findings of this study showed that different criteria exist for priority setting of HTA projects among the responsible organization in the world. Based on the findings of the study quantitative ranking methods of the criteria and considerations of cost - benefit and cost - effectiveness are rarely used as other studies showed.

Different criteria for priority setting of HTA topics were extracted from the selected studies of the systematic review along with the responses of Euro Scan members. 49 priority setting criteria were identified that were divided to 5 categories as follow: the criteria related to technology, disease or problem, society, health system, and political considerations (table 1). Extracted criteria from one of the studies were specific to prioritization of diagnostic technologies.

The most frequent criteria were the following: potential clinical benefits or clinical effectiveness (34 frequency), costs related to the technology (15 frequency), burden of disease and Severity of disease (17 frequency), alternatives (16 frequency), political- social- ethical and legal consideration (16 frequency), organizational impact (need to reorganization and training the staff and issues related to the staff) with 14 frequency, financial burden or economic impact of the technology (13 frequency), available evidence or quality of the evidence (12 frequency), the number of patients or affected people (12 frequency), safety (11 frequency), risk of inappropriate diffusion and novelty or innovation of the technology (each with 9 frequency), Variation in the rate of use of technology and budget impact (with 8 similar frequency), timeliness of the assessment (7 frequency) and other aspects with impact on health policy (6 frequency).

Table 1. Category and frequency of priority setting criteria

Category	Criteria	frequencies
Technology	Rate of use of technology	8(9- 15)*
	Clinical effectiveness/ benefits	34(3, 6, 10- 12, 15, 16, 18, 20- 35)*
	Alternatives	16(6, 10, 12, 14, 15, 20, 22, 27, 28, 31, 34, 36, 37)*
	Risk of inappropriate diffusion	9(3, 23, 24, 21, 33, 35)*
	Safety	11(25, 27- 30, 34, 38)*
	Quality of evidence	12(6, 10, 12, 15, 24, 27- 29, 31, 37)*
	Potential of numerous applications	2(14, 20)
	Novelty/ innovation	9(12, 21, 23, 26, 30, 33, 38)*
	Convenience	1(30)
	Doubt in the current approach	1(34)
	Cost of technology:	
	costs related to technology	18(6, 11- 13, 15, 17, 19, 27, 29, 30, 33, 35, 37)*
	Financial burden/ economic impact	13(10, 15, 16, 18, 22, 24, 26, 28, 32, 36)*
	Cost-effectiveness	5(6, 21, 29, 33)*
	Budget impact	8(6, 10, 17, 22, 25, 30, 31)*
	Direct costs for patients	4(12, 16- 18)
	Economic evaluation/cost-benefit	2(10, 25)
	Technology assessment:	
	duplication of assessment	1(36)
	Possibility of the use of assessment results	5(11, 14, 19, 36, 37)
Cost of assessment	3(3, 14, 30)	
Timeliness of assessment	7(10, 12, 14, 15, 27, 31, 37)	
Methodological needs	1(12)	
Disease/ problem	Burden of disease/ severity of disease	17(6, 10- 13, 15, 16, 18, 19, 21, 22, 24, 28, 30, 33, 35, 37)
	Magnitude of health problem	4(12, 15, 26, 36)
	Financial burden of disease	2(3, 15)
	Prevalence of disease	4(12, 13, 15, 34)
	Immediacy	1(30)
Society	Accessibility to technology	6(6, 12, 14, 17, 25, 27)
	Affordability for persons	2(6)*
	Number of patients	12(14, 16, 18, 20, 28, 33, 35)*
	Society's expectations	2(25)*
	Impact on cost and saving of patients and society	
	Speed of technology adoption	5(13, 15, 20, 23)
	Demographic changes	2(15, 28) 2(12, 27)
Health system	Solidarity	1(6)
	Importance of public health	2(6, 12)
	Consistency with previous decisions	1(6)
	Organizational impacts	14(12, 18, 21, 23- 25, 27, 32- 35)*
	Relation with health policies	3(14, 21, 34)
	Need to make regulatory decisions	1(37)
	Need to decision making about payment	1(37)
	Impact on resources	2(12)*
	management aspect	1*
	Autonomy	1(6)
Other aspects with impact on health policy	6(16- 18)*	
Political consideration	Political-social-legal and ethical considerations	
	Strategic issues related to technology	16(10, 12, 13, 21, 24- 28, 31- 33, 36)*
	External pressures	1(6)
	Policy makers and clinicians interests and scientific debate	3(25, 26)*
	Political or public needs	5(10, 15, 31, 37, 38) 3(12, 27, 37)

*other cases were extracted from the opinions of Euro Scan members

Discussion

This study aimed to identify the criteria used to priority setting of topics of HTA projects, according to the experiences of different countries through the systematic review of literature and opinions of members of Euro Scan

and propose suggestions for Iran. 49 criteria extracted in this study were classified in 5 categories: technology, disease or problem, society, health system, and political consideration. However, the classification of criteria used in prioritizing the HTA topics in this study is different with other studies, but many of the criteria derived from this study lies in the other studies categorization of criteria.

Noorani in systematic review of the 12 priority setting frameworks of 11 agencies in 10 countries showed that there is a difference among the HTA agencies about classification, scoring and weighting the criteria. In that study 59 unique priority setting criteria for topics of HTA projects was identified that were divided in 11 groups: alternatives, budget impact, clinical impact, controversial nature of technology, burden of disease, economic impact, ethical-legal, and social considerations, evidence, timeliness, and variation in rate of use (10).

Eddy also divided 38 priority setting criteria in 3 groups included: health importance, economic importance and the expectation that an assessment will make a difference (15). Golan also divided priority setting criteria of new health technologies in four categories: 1) need, appropriateness, clinical benefits, 2) efficacy, 3) equality, solidarity, other ethical and social consideration, and 4) other considerations. Golan concluded that each category has sub criteria which are usable by different countries (6).

The findings of this study showed that there were differences among various organizations in the number and nature of the criteria used for HTA priority setting. This could be due to this issue that some countries for instance, pay more attention to the costs and in some other faster access to modern treatments is the political goal of that country. The study performed by Douw and Vondeling also showed the same results and indicated that this result may be caused by the difference in the values, cultures, and health priorities of various countries (17).

Findings of Henshall's study in 1997 showed that priorities should consider the costs and potential benefits of the assessments (14). In this regard, present study showed that, although the technology-related costs, economic impact of technology and potential benefits of the technology are considered in many cases, but the cost of assessment was mentioned in only 3 of the studies (3, 14, and 30).

Despite the importance of the criterion of cost – effectiveness, its use has been remained limited in priority setting process. Some reasons of this insufficient use of this criterion are the political influence, social preferences and administrative systematic barriers such as lack of necessary data (39).

The results of present study showed that cost-effectiveness of the technology was mentioned in the small number of studies (6, 21, 29, and 33). This result was also observed in Douw and Vondeling's study. The uncertainty about the estimation of this criterion for new health technologies was stated as the reason of this issue (21). Kafiriri and colleagues in a study conducted in Uganda to determine the importance of priority setting criteria Concluded that cost-effectiveness and quality of evidence are useful in prioritization (40).

The findings of present study revealed that the rating system of criteria was used in a quarter of the selected studies of the systematic review while one of the recommendations of the priority setting subgroup of EUR ASSESS project, coordinating project of decisions related to HTA in Europe, was that the adopted method should allow possible assessments to be rated in some systematic way using explicit criteria and quantitative and qualitative data that are relevant and available (14). Pluddemann and colleagues in a study also concluded that the quantitative rating methods and cost- benefit considerations for priority setting were rarely used (34).

Comparison of the findings of this study with the findings of selected studies of systematic review showed that although classification of priority setting criteria of HTA projects is different across the responsible organizations, this difference does not seem too serious with deeper view to the literature and many of these criteria overlapped in the HTA agencies.

CONCLUSION

The findings of systematic review and opinions of Euro Scan's members showed that there is a difference among the HTA agencies in the term of priority setting criteria. Therefore, these criteria should be selected, weighted, and scored according to the goals of organization, the people working in this field, the policies and values of that country, and the type of technology to be assessed (i.e. diagnostic, treatment, drugs, procedures, and etc).

Regarding the results of this study the most frequent criteria were proposed for the use in prioritization and topic selection of HTA projects in Iran. These criteria included the clinical benefits/ effectiveness, alternatives, available evidence needed to do HTA based on, safety, costs related to the technology, economic impact(criteria related to the technology), burden of disease(criterion related to the disease or problem), number of patient affected(related to the society), organizational impact(need to restructuring and training the staff) related to the health system, and the political- social- ethical and legal considerations(related to the political considerations. But this does not mean the absolute use of these criteria. The combination of all the extracted criteria should be used in different conditions as the experienced countries did so.

To clear prioritization of HTA projects, and therefore to efficient allocation of limited resources, it is proposed that required conditions such as the knowledge of using the various criteria, experts, and the suitable data for using the criteria should be provided. More researches recommended regarding the necessity to use the systematic rating methods of criteria and cost-benefit considerations of technologies and their assessment. Because the opinions of Iranian experts were not considered in this study, to complete the findings, more researches is needed using Delphi technique among the experts related to selection, weighting, and scoring the priority setting criteria of topics of HTA projects in Iran.

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