

Executive Summary (영문)

Evaluation of the Impact of NECA's Health Technology Assessment (HTA) Research

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☐ Background

The primary objective of health technology assessment (HTA) research is to provide fundamental information for decision-making regarding the healthcare system on the national or regional level. Therefore, it is important to understand to what extent and in what manner (e.g. decision-making, behavior changes, and information recognition) the information provided by the HTA has influenced decision-makers.

Following its establishment, the National Evidence-based Healthcare Collaborating Agency (NECA) has generally classified the performance of its HTA research into the following categories: academic performance, policy performance, internationalization performance, social performance, and infrastructure performance. Internal reports have been the main venue for quantitative evaluations of performance in these categories. However, the HTA research of NECA has been criticized for its minimal impact on policy and for concerns related to the reliability of the internal audit results, including failure to establish an objective evaluation process that involves external evaluators and information recipients, and—especially for policy performance—failure to reflect the views of policy-makers beyond those included in the process by the head of the department. Thus, the necessity of a more systematic evaluation and management system has long been recognized.

Accordingly, in order to establish a system for assessing the influence of HTA research, we developed a set of influence assessment criteria through reviews of both domestic and international case analyses and preceding studies, and as a test case, applied these criteria to HTA research previously conducted by NECA to analyze its performance and to assess its influence.

□ Objective

First, we will study the current status of domestic HTA research and channels through which research findings have been disseminated by exploring methods of influence assessment used by international HTA institutions and by conducting a comparative analysis of the influence and applications of HTA across different countries.

Second, we will develop a sustainable set of influence assessment criteria for HTA research and apply those criteria to analyze the mechanisms of social applications of previously conducted research and trends therein. Based on these results, we will then investigate strategies to strengthen the social influence of research, such as reinforcing major diffusion channels.

Third, we will ameliorate the weaknesses of the overall system for research performance assessment through a systematic assessment of relevant feedback, and we will propose future directions in research design and the establishment of mid- to long-term management strategies.

□ Methods

I. Definition of HTA and influence assessment

In this study, health technology assessment (HTA) research was used as a comprehensive term encompassing all research conducted by NECA. However, the research protocol for this study classified studies into the following 4 categories according to their purpose and methods: ‘individual technologies assessment’ for studies evaluating the safety, efficacy, and economic performance of health technology, ‘policy research’ for studies investigating

policies and systems associated with health technology, ‘methodological research’ for studies proposing advances in HTA research methodology, and ‘other research’ for studies on the expansion and influence of the HTA system.

Additionally, ‘research outcomes’ were defined as the use of the research outputs of NECA in producing secondary outputs (policies, clinical guidelines, news stories, information booklets, etc.) or as direct/indirect utilization in the form of changes in the perceptions or the decision-making process of decision-makers. ‘Influence’ was defined as the contribution of research outcomes to various changes in society. The level of influence was estimated by using both quantitative and qualitative methods to analyze research performance.

II. Classification of influence and the scope of analysis

In this study, influence was broadly classified into 3 categories: 1) academic influence, 2) policy/clinical influence, and 3) social/economic influence. For social influence, the scope of the analysis was limited to an investigation of information diffusion performance and receptivity to information diffusion in the general population. The scope of analysis and indicators of influence were developed based on the influence assessment model (Schumacher & Zechmeister, 2013) of the Ludwig Boltzmann Institute for HTA (LBI-HTA), the HTA institution of Austria.

〈Indicators used in the influence analysis of HTA research conducted by NECA〉

Category		Indicator	Reference
Academic influence	Academic performance	· Number of citations	· Becker Library Model(2014) · CAHS-Canadian Academy of Health Sciences(2009)
		· Paper/publication performance	
Policy/clinical influence	Policy utilization performance	· Number of cases supporting policy establishment	· Schumacher & Zechmeister (2013)
		· Number of cases supporting law enactment/amendment	
		· Number of cases supporting reimbursement decisions	
		· Views of policy-makers	

Category	Indicator	Reference
Clinical utilization performance	· Number of cases supporting clinical guidelines	· Becker Library Model(2014)
	· View of clinical decision-makers	· Schumacher & Zechmeister (2013)
	· Media reports	· Schumacher & Zechmeister (2013)
Social/economic influence	· Homepage user experience	· Payback framework(Buxton and Haney 1994; 1996)
	· Customer awareness and satisfaction	· Becker Library Model(2014)
	· Cases supporting efficient utilization of medical financial resources	· Schumacher & Zechmeister (2013)

□ Results

I. Academic influence

Data were collected about the domestic and international publications presenting findings from the 792 studies and evaluations conducted by NECA between 2009 and 2017. For each study, we extracted information about the study title, the name of the journal it was published in, the number of citations, and the impact factor, and found that a total of 156 papers were published in a journal and were cited a total of 1,670 times. In an analysis according to the classification of HTA research used in this study, individual technologies assessment showed the highest percentage, accounting for 122 of 156 papers (78.2%), followed by 18 articles presenting other research (11.5%), 11 presenting policy research (7.1%), and 5 presenting methodological research (3.2%). Considering the difficulties in directly applying methodological research and other institutional research to the actual policy and clinical decision-making process, efforts should be made to expand the influence of HTA research by publishing articles that will show good outcomes in terms of academic performance.

II. Policy/clinical influence

Among the 209 major HTA research studies conducted by NECA between 2009 and 2016, approximately 56% were utilized in the policy and clinical fields. Despite difficulties in demonstrating direct causality between the research results and actual policy, these results are meaningful in that proactive proposals of policy agendas have been made based on research reports, and the outcomes thereof have been consistent with policy directions.

Meanwhile, the following factors can be considered as causes of the low level of influence upon policy-making and the clinical field. First, despite the structural benefits of policy research, which is generally conducted in response to governmental requests, it is important to acknowledge that the proportion of research results actually utilized in the process of law enactment/amendment and reimbursement decisions is quite minimal (7.1%). Possible measures to improve the practical use of policy research may include responding to immediately relevant policy demands, presenting precise guidelines for directions of policy decision-making, and actively promoting the policy implementation process after decision-making.

Second, the overall low clinical utilization of HTA research was also problematic. In efforts to increase the application of research results in the clinical field, research protocols must be designed based on a consideration of the establishment/revision of clinical guidelines at the stage of suggestion and design of a research topic. Furthermore, involving major research societies in the research process may also increase the degree to which HTA research is applied in clinical guidelines. Beyond the preparation of research reports, further efforts to disseminate research results should be made by participating in public inquiries, debates, and conferences to share the results with the associated research societies.

III. Social/economic influence

The perception and utilization of the research outputs of NECA in society as a whole were investigated through 1) analyzing media reports, 2) conducting a

customer awareness survey, 3) analyzing the homepage user experience, and 4) conducting a case analysis of medical expense reduction. Through this analysis, media reports, news articles, and activities such as debates were found to be the most effective ways to increase the influence of HTA research. The general population encountered HTA research outputs through the mass media or online, and the satisfaction rate was the highest for concise content (e.g., carefully produced images or videos such as card news a commonly-used format in Korea in which news is presented in the form of a slideshow and webtoons. Additionally, the most common reason for dissatisfaction with research outputs was that ‘the content and use of terminology were difficult to understand,’ and the most common response for was to improve the use of research outputs was likewise ‘make the content and use of terminology easier to understand’.

To ameliorate these weaknesses, first, efforts should be made to produce customer-friendly content, thereby increasing the accessibility of research outputs. This must include producing content using accessible language that is easy to understand for the general population, and strategies to provide the core information to be delivered within 3 minutes must be devised. Second, online media must be actively utilized, and timely content linked with social issues must be developed in order to effectively advertise and expand HTA research outputs. Third, beyond the promotion of research outputs, continuing efforts must be made to underscore the importance of evidence-based medicine and to promote awareness of the concept of HTA.

☐ Conclusions

A limitation of this study is that the influence of each study was evaluated according to specific subfactors, resulting in a lack of generality that reduces the degree to which practical and specific implications can be drawn from the results. Nevertheless, this study is the first to perform a quantitative and qualitative evaluation of the direct and indirect influence of research using all possible methods through a systematic analysis of all research conducted by

NECA during the past 10 years. Thus, its findings are highly meaningful in that it has attempted to present a comprehensive proposal in a constructive manner. These results are expected to strengthen the weaknesses of the HTA research of NECA through multidimensional feedback on the overall research performance system, and to be utilized as fundamental data to support research design and the establishment of mid- to long-term management strategies in the future.

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☐ **Key words**

Health Technology Assessment (HTA), Impact of HTA, HTA impact assessment