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A Study on Medical Fees According to the Pilot Project for Collaborative Consultation Between Western and Korean Medicine

By

Han-sung Kim
Korea Polytechnics, Seoul, Korea

Jung-sik Woo*
Korea Polytechnics, Seoul, Korea

Young-joon Park
Cheju Halla University, Jeju, Korea
*Corresponding Author E-mail: jsw55@kopo.ac.kr

Abstract

Collaborative consultation between western medicine and oriental medicine has been drawing attention for its improved quality of medical services through mutual collaboration between the two disciplines and its synergistic effect through convergence of the two disciplines.

For the collaborative consultation cost, cost compensation levels and opportunity costs were considered in the relative value scores of the current consultation to calculate the primary/follow-up consultation fees for face-to-face/non-face-to-face consultation. In addition, based on the details of history of collaboration between the two disciplines, the level of incentives in the form of added cost was presented. For the management of prescription history for mutual medical services, which is essential for the face-to-face collaboration, a new collaborative prescription management fee was presented for each type of medical history. The proposed new fee along with the improvement plan was based on the premise that the clinical effectiveness of the collaboration has been verified. If the improvement plan is to be recognized for its validity, there should be a review on the clinical effectiveness of collaboration in terms of mutual cooperation and complementation instead of a conflict between the two disciplines.

Keywords: Western-Korean Medical Cooperation, Korean Traditional Medicine, Collaborative Consultation Fee, Cost, Cost Compensation Rate.

1. Introduction

1.1 Background on the introduction and review of collaborative consultation between Western medicine and Korean medicine

Collaboration between Western medicine and Korean medicine is to provide integrated medical care through mutual cooperation between Western and Korean medicine and includes all medical activities (Lim et al., 2012) jointly performed by medical doctors and oriental medicine doctors in the same medical institution or between different medical institutions based on different academic theories and medical technologies.

The collaboration allows western medicine and oriental medicine to share medical technology and medical knowledge to complement each other's strengths and weaknesses. In addition, the high-level collaboration between the two disciplines and synergistic effects through convergence in the industrial aspect can contribute to pioneering new medical fields as well as attracting foreign patients and exporting Korean medical technology overseas. The two disciplines, modern medicine and traditional medicine, are being grafted to become an

alternative mode to improve medical services in many countries around the world (CAM, 2020; Yoon et al., 2017). Also, the WHO recommends using traditional medicine to develop methods of health promotion unique to each country's situation (WHO, 2002, 2013).

Thus, in this study, the supply and usage patterns of the Western-Korean medicine collaborative services are analyzed to investigate the validity and propriety of the collaborative fee model, and an improvement plan for the fee model is suggested for revitalizing the collaboration services.

1.2 Current cost status and problems of the pilot project

The fee for the pilot project of Western and Korean medicine collaboration is currently given in the form of a 'Western and Korean medicine consultation fee' in case the medical services are provided on the same day by the doctors at both Western medicine and Korean medicine departments of the hospital designated as a pilot project target institution, and the Western and Korean medicine consultation fee is divided into 'primary consultation fee' and 'follow-up consultation fee' (Ministry of Health and Welfare & Health Insurance Review Assessment Service, 2019).

Since in most cases, there was hospital-level participation in the pilot project for Western and Korean medicine collaboration, the initial consultation and re-consultation at the hospital were applied mutatis mutandis to calculate the cost of primary and follow-up collaborative consultation fees. However, when a low consultation fee is applied mutatis mutandis, a low collaborative consultation fee is also applied, resulting in the problem of low compensation. In particular, the level of cost compensation for basic medical fees that include medical examination was 75.2%, which was very low compared to the types of surgery, procedure, and examination (Shin et al., 2012). Applying hospital-level consultation fees mutatis mutandis may lead to pushbacks from service providers, so it is necessary to improve on the level of collaborative consultation fees, such as level of compensation relative to the original cost.

Since there has been a lack of mutual trust in collaboration and exclusive rigidity in the work area due to the differences in educational curricula, etc., between the two disciplines, it is necessary to provide policy-level fee compensations in addition to the basic fee to induce frequent face-to-face contact between the two disciplines, thereby forming a culture of mutual cooperation and trust, and alleviating exclusive work rigidity. Thus, it is necessary to review the policy-level fee calculation that can encourage face-to-face collaboration between the two disciplines.

2. Methods

For the development of additional fee and a new convergence fee for face-to-face consultation between Western medicine and Korean medicine, the details of consultation history were analyzed from December 2017 to May 2018, targeting the medical institutions that have conducted a pilot project for collaborative consultation between Western medicine and Korean medicine.

In order to improve on the various issues of cost related to the collaborative consultation between Western medicine and Korean medicine, this study suggests two ways of improving on the cost issue in which the collaborative consultation between Western medicine doctors and oriental medicine doctors is divided into face-to-face and non-face-to-face practices.

First, in the case of non-face-to-face fees between Western medicine and oriental medicine, as shown in Fig. 1, the current primary and follow-up collaborative consultation fees are maintained as non-face-to-face fees. In addition, we propose an alternative of recalculating the cost in consideration of the hospital-level initial consultation and re-consultation fees and the level of initial cost compensation.

Second, in the case of face-to-face collaborative consultation fees, as shown in Fig. 2, the claim data for collaboration is analyzed in consideration of the cost calculation criteria for face-to-face consultation between Western medicine and oriental medicine (first consultation, re-consultation), and opportunity cost between the two disciplines. In addition, a new convergence fee is established for collaboration consultation between the two disciplines and an additional cost is proposed for unique consultation by each of the two disciplines.

In particular, for the face-to-face collaboration fee for consultation between Western medicine and Korean medicine, two separate ideas were reviewed: a plan to add to the existing Western medicine and Korean medicine practices and a plan to establish a new collaboration convergence fee. For the additional rate for collaboration, two ideas were proposed: A method of calculating the additional rate for consultation for face-to-face collaboration prescriptions between Western medicine doctors and oriental medicine doctors and a plan of newly establishing a convergence fee that is clinically valid and effective using expert advice and the details of consultation history in collaboration.

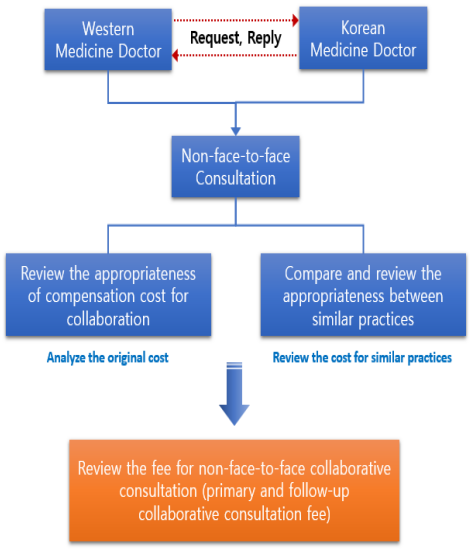

Fig. 1. Proposal of collaborative consultation fee for non-face-to-face consultation

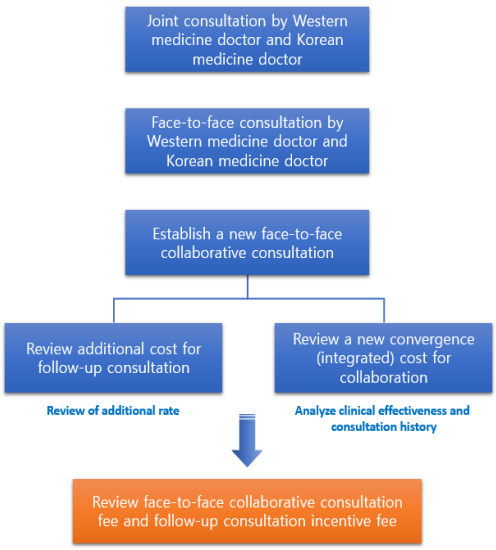

Fig. 2. New collaborative consultation fee for face-to-face consultation and proposal for follow-up consultation incentives

3. Results

3.1 Results of analysis of the same-day integrated collaborative consultations

The type of the same-day convergence consultation between Western medicine and Korean medicine includes the following cases in Table 1. ① only integrated examinations between Western medicine and Korean medicine were conducted without prescription, ② only examination was conducted in Western medicine while therapy was conducted in Korean medicine, ③ medical imaging diagnosis and oriental medicine therapy were prescribed

together, ④ medical sample diagnosis and oriental medicine therapy were prescribed together, ⑤ western medicine physical therapy and oriental medicine therapy were prescribed together, ⑥ western medicine psychotherapy and oriental medicine therapy were prescribed together, ⑦ medical treatment was conducted in both western medicine and oriental medicine, ⑧ prescription was given in western medicine and therapy was conducted in oriental medicine. In Western medicine, consultation history was classified into different types because the cost of treatment varies greatly depending on the type of prescription. However, in the case of oriental medicine, it was difficult to distinguish between the types of consultation such as acupuncture, oral statement, and cupping, so the types of prescription were not classified.

The number of cases and incidence rates of the same-day convergence consultations between Western medicine and Korean medicine were analyzed in 31 intra-institutional collaborations and 28 inter-institutional collaborations, targeting the institutions participating in the Western medicine and Korean medicine collaboration pilot project in which collaborative consultation fees were accrued. The results showed that in the case of inter-institutional collaborative consultation, the most common was 28.5% of the same-day convergence consultation in which ② Western medical examination and oriental medicine therapy were conducted. And, in the case of intra-institutional collaborative consultation, the most common was 47.9% of cases in which oriental medicine therapy was conducted after imaging diagnosis in Western medicine.

Table 1. The number of same-day convergence consultations and component ratio

Type division	Convergence consultation on the day of inter-institution collaboration		Convergence consultation on the day of intra-institution collaboration		Total	
	No. of collaborative consultation	Component ratio	No. of collaborative consultation	Component ratio	No. of collaborative consultation	Component ratio
① Oriental medicine convergence therapy	5,098	5.1	280	0.3	5,378	2.9
② Western medicine examination & Oriental medicine therapy	28,572	28.5	7,051	8.0	35,623	18.9
③ Imaging diagnosis & Oriental medicine therapy	17,252	17.2	42,161	47.9	59,413	31.6
④ Sample diagnosis & Oriental medicine therapy	15,557	15.5	2,731	3.1	18,288	9.7

Type division	Convergence consultation on the day of inter-institution collaboration		Convergence consultation on the day of intra-institution collaboration		Total	
	No. of collaborative consultation	Component ratio	No. of collaborative consultation	Component ratio	No. of collaborative consultation	Component ratio
⑤ Physiotherapy & Oriental medicine therapy	22,417	22.4	25,324	28.8	47,741	25.4
⑥ Psychotherapy & Oriental medicine therapy	16,382	16.4	19,195	21.8	35,577	18.9
⑦ Medical procedures & Oriental medicine therapy	4,269	4.3	7,745	8.8	12,014	6.4
⑧ Drug administration & Oriental medicine therapy	3,206	3.2	1,008	1.1	4,214	2.2
Total of the same-day convergence consultation between Western medicine and Korean medicine	100,184	100.0	87,952	100.0	188,136	100.0

3.2 Development of the incentive fees according to face-to-face collaborative consultation between Western medicine and Korean medicine

3.2.1 Incentives through additional fees

In the case of the current Western medicine, the addition rate of the specialist for medical practice is applied at a rate of 10% to 100% depending on the field as described above. In the case of face-to-face collaboration between Western medicine and Korean medicine, there is an opportunity cost associated with the face-to-face multidisciplinary integrated consultation compared to non-face-to-face collaborative consultation. Also, additional time and effort is needed for the doctor's workload for collaboration according to the prescriptions made by the multidisciplinary parties. Therefore, in order to encourage face-to-face collaboration between Wester medicine and Korean medicine, which is a true collaboration, it is necessary to provide an incentive in which an additional rate is applied to the medical practice that prescribes the cost of consultation by field.

The consultation fee is excluded because it is compensated for the above face-to-face and non-face-to-face consultation. As a result of analyzing the consultation data and adding 10%, which is the minimum standard for additional cost of a specialist, to the consultation fee, as shown in Table 2, a pilot project target institution may need an additional amount of about 970 million won per year. If the range of the additional rate is increased to 20% or 30%, the corresponding finance will be doubled or tripled, compared to the 10% additional rate.

Table 2. The scale of the additional fee to the same-day convergence consultation cost

Unit : Million Won

Type division		Scale in case 10% service fee is added		
		Western medicine	Korean medicine	Total
Medical examination & Korean medicine therapy	Inter-institutional collaborative consultation	-	49	49
	Intra-institutional collaborative consultation	-	11	11
	Subtotal	-	60	60
Image diagnosis & Korean medicine therapy	Inter-institutional collaborative consultation	80	39	120
	Intra-institutional collaborative consultation	109	109	218
	Subtotal	189	148	337
Sample diagnosis & Korean medicine therapy	Inter-institutional collaborative consultation	94	27	121
	Intra-institutional collaborative consultation	12	5	17
	Subtotal	106	32	138
Physiotherapy & Korean medicine therapy	Inter-institutional collaborative consultation	53	42	95
	Intra-institutional collaborative consultation	46	51	97
	Subtotal	99	93	192
Psychotherapy & Korean medicine therapy	Inter-institutional collaborative consultation	37	42	79
	Intra-institutional collaborative consultation	57	34	91
	Subtotal	94	76	170
Medical treatment & Korean medicine therapy	Inter-institutional collaborative consultation	24	7	31
	Intra-institutional collaborative consultation	34	13	46
	Subtotal	57	20	77
Total	Inter-institutional collaborative consultation	288	205	494
	Intra-institutional collaborative consultation	257	223	480
	Subtotal	546	428	974

3.2.2 Incentives via setting up a new convergence cost for collaborative consultation prescription management

In the face-to-face collaboration between Western medicine and Korean medicine, not only the fee addition rate but also prescription details in other fields are supposed to be managed. In other words, oriental doctor's management of the prescription by medical doctor and medical doctor's management of the prescription by the oriental doctor inevitably occur. Therefore, a prescription administration fee per case was developed as shown in Table 3 by dividing the financial amount required for the additional rate by the number of same-day convergence consultations that are estimated to be face-to-face.

In case of establishing a new prescription management fee based on an additional rate of 10%, there is a difference in the cost between "inter-institutional collaborative consultation" and "intra-institutional collaborative consultation" due to the difference in treatment details and number of cases. In general, the analysis showed that there is a higher prescription management fee for collaborative consultation between the large-scale institutions that are expected to have higher severity of patients.

Table 3. Proposal of prescription management fee by type of collaborative consultation

Unit : Million Won

Type division	Prescription management fee per case by type of collaborative consultation		
	Inter-institutional collaborative consultation	Intra-institutional collaborative consultation	Total average
Medical treatment & oriental medicine therapy	1,705	1,537	1,672
Image diagnosis & oriental medicine therapy	6,941	5,163	5,679
Sample diagnosis & oriental medicine therapy	7,781	6,145	7,537
Physiotherapy & oriental medicine therapy	4,220	3,845	4,021
Psychotherapy & oriental medicine therapy	4,826	4,732	4,775
Medical procedures & oriental medicine therapy	7,183	5,993	6,416

4. Conclusion and Discussion

To investigate the validity of a fee model in the remuneration pilot project of the Western medicine and Korean medicine collaboration, this study proposed a fee improvement plan by analyzing the problems associated with the fees in the collaboration pilot project. The collaboration between the two fields can be expected to create a synergistic effect of improving the quality of medical services in which medical technology in the medical field and oriental medicine field is shared to complement the strengths and weaknesses of both sides. For the medical cost associated with the collaboration pilot project, in case there is a collaboration set for a disease between the two sides, the 'collaborative consultation fee' was divided into 'primary collaborative consultation fee' and 'follow-up collaborative consultation fee.'

The cost of collaboration treatment applied to the pilot project contains several problems. First, it is necessary to improve the level of the collaborative consultation fee, such as the level of compensation for the cost by using the hospital-level consultation fee as the mutatis mutandis fee. Second, it is necessary to come up with a reasonable fee compensation structure by dividing it into non-face-to-face collaboration and face-to-face collaboration. Third, it is necessary to develop a policy-level cost that can encourage multidisciplinary simultaneous face-to-face treatment between Western medicine and Korean medicine. Fourth, it is necessary to develop an effective integrated treatment practice between the two fields and develop an integrated convergence cost for face-to-face treatment prescription between the two fields. Given the above problems, the collaborative consultation fee was divided into non-face-to-face and face-to-face collaborative consultations for review as shown in Table 4.

Table 4. A proposal for relative value score and cost for the collaborative consultation fee

Cost division		Current application score	Review (draft)	
			Non-face-to-face (Separate cost for Western medicine and Korean medicine)	Face-to-face (Integrated cost)
Collaborative consultation fee	Primary collaborative consultation fee	208.86	208.86 ~ 277.74	417.72 ~ 547.02
	Follow-up collaborative consultation fee	151.37	151.37 ~ 201.29	302.74 ~ 396.45

In order to encourage face-to-face collaborative consultation cost between medical and oriental doctors for individual patients, such as multidisciplinary consultation during medical-Korean collaboration, the development of incentive fees according to face-to-face medical-Korean collaboration is presented in Table 5.

Table 5. A proposal of incentives during face-to-face collaborative consultation

Method of providing incentives	Main content
Additional cost	Based on the current status of additional cost in medical standard, a minimum standard of 10% of specialist cost is added.
Set up a new collaborative convergence cost	A prescription cost is newly established according to the contents of the collaborative prescription at an additional 10% scale of the specialist cost.

According to the analysis of the claim data for the same-day collaboration between Western medicine and Korean medicine at 31 places of collaboration in the pilot project organizations and 28 places of collaboration in inter-institutional collaboration institutions, convergence consultation during the same-day collaboration between Western medicine and Korean medicine was about 8.6%.

Among the types of convergence consultation, in the case of inter-institutional collaborative institutions between Western medicine and Korean medicine, medical examination and oriental medicine therapy were the most common (28.5%) for the same-day convergence consultation, while in the case of intra-institutional collaborative institutions between Western medicine and Korean medicine, the most common case was imaging diagnosis followed by oriental medicine therapy (47.9%). In the case of applying the minimum additional 10% fee for medical specialists to provide incentives for face-to-face collaborative consultation, the pilot project organization would need an additional annual budget of about 970 million won. For the contents of the convergence prescription, the case where imaging diagnosis and oriental medicine were prescribed together was estimated to be 337 million won, the largest amount of additional financial expenditure. When the financial scale of 10% added cost was newly established as a convergence cost per prescription, the convergence fee for sample diagnosis & oriental medicine therapy was 7,537 won per case, followed by medical treatment & oriental medicine therapy of 6,416 won (presented in Table 6).

Table 6. New proposal for financial scale and cost by type of collaborative consultation

prescription

Type of collaborative consultation prescription	Expected financial scale in case of 10% additional cost	Rate according to the new plan for collaborative consultation prescription
Medical treatment & oriental medicine therapy	60 million won	1,672 won
Imaging diagnosis & oriental medicine therapy	337 million won	5,679 won
Sample diagnosis & oriental medicine therapy	138 million won	7,537 won
Physiotherapy & oriental medicine therapy	192 million won	4,021 won
Psychotherapy & oriental medicine therapy	170 million won	4,775 won
Medical procedures & oriental medicine therapy	77 million won	6,416 won

In this study, whether the cost is adequate and how to provide incentives for the face-to-face collaborative consultation were reviewed to encourage collaborative consultation between Western medicine and Korean medicine, but due to the scope and limitations of the study, there are some considerations to review for the future expansion of the project. First, the clinical efficacy of collaborative consultation between Western medicine and Korean medicine should be carefully reviewed. Although the effectiveness of collaborative consultation has been recognized through a patient satisfaction survey of the pilot project, it is true that the results on the cases of clinical effectiveness for collaborative consultation are not sufficient. Therefore, for more detailed cost compensation, a mid- to long-term review of clinical efficacy must be conducted first. And, it is important to get away from regional confrontation and conflict between Western medicine and Korean medicine (T.-H. Lee & Kim, 2011), and it is hoped that the effectiveness or efficiency of integrated treatment will be evaluated.

Even at the level of cost compensation, it is necessary to first select a group of diseases that has high clinical effectiveness in collaborative consultation between Western medicine and Korean medicine. Diseases generally recognized in the current collaborative consultation include musculoskeletal disorders, stroke, and neoplasm, but the evidence is not sufficient for the clinical effectiveness of collaborative consultation in such diseases. The cost for collaborative consultation needs to be constructed not only for outpatients, but also for inpatients. In addition, as the pilot project is applied to outpatients, it may be worthwhile to apply the incentives for additional fees or convergence fees to inpatients who really need collaborative consultation for themselves and also for clinical reasons.

Another key aspect in the construction of the collaborative consultation between western medicine and Korean medicine is that the study reviewed the current framework of service classification (primary consultation fee, follow-up consultation fee), giving no consideration to the differences that arise according to the size of the hospitals or resource consumption. As a result, one limitation of the study is that it wasn't able to thoroughly investigate such service classification. If service classification is validated in the future, cost construction should be conducted based on various methodologies (Busse et al., 2011; S. Y. Lee et al., 2014), such as bottom-up or top-down methods involving the population of the pilot project target organizations.

Future studies need to include the differences in the number participants, hours, targets and prescriptions in collaborative consultation. For fee construction, service classification should be made with the help of clinical doctors participating in the collaboration, which should be considered in future studies.

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