



Case study projects by a Korean national research agency: Past 12 years and future

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ABSTRACT

Objectives: Scientific rigor is a known challenge to establish in heavily individualized practices of traditional medicine. A national research agency in Korea carried out a 12-year project to promote case reports among clinics of Korean Medicine (KM). This report aims at providing challenges, achievements, and thoughts for future endeavors.

Methods: We reviewed all the projects executed by the Korea Institute of Oriental Medicine between 2005 and 2017 promoting case reports in clinics of KM. The findings were categorized stage of project development, themes of project stage, achievement, and challenges.

Results: The implemented studies include eleven prospective- and five retrospective - case series, and one comparative trial. The project stages are divided into four, initial (surveying and building a database on Korean acupuncture), transitional (educating Korean Medicine doctors on writing case reports and building a case report system), stagnation (partially attributable to IRB's considering case report projects as clinical trial) and resurrection (building a rigorous evidence base from local clinics). The major challenges included practitioners' in clinics feeling burdened by the rigor of documentation requirement, the limited options of usable objective measurement tools available at general KM, and IRB's categorizing case report projects as clinical trials hence imposing unrealistic compliance burden.

Conclusions: Promoting case reports in local clinics, while being warranted to remain as a crucial research method to build evidence based KM practice, requires supports from stakeholders including motivated clinicians of KM, extended use of diagnostic device available at KM practice, and insightful and flexible regulatory bodies' decision making.

1. Introduction

Korean Medicine (KM) is an evolved medical system through modernization of traditional medicine. Despite growing enthusiasm in KM, criticism exists regarding the lack of scientific evidence on the efficacy of KM [1]. Having been imposed of scientific rigor in the evaluation of efficacy, randomized controlled trials (RCTs) have been conducted to build evidence. Some argued, however, that RCT may not be the most appropriate method for KM modalities [1]. The challenges that KM faces in designing rigorous clinical study include the followings: Firstly, real world KM interventions are combination of multiple procedures individually tailored even including self-help advice from Korean Medicine doctors (KMD), hence are difficult to simplify with

reductive perspectives. Secondly, the primary outcome in KM are often the restoration of homeo-stasis or –dynamics and vitality of the host, which is supposed to remain integrated as a whole, rather than the modification of pathological entities [2,3].

We contend, being driven to comply with methods developed for investigation of pharmacological agents, fair evaluation of KM's efficacy is far from being realistic. Perhaps this explains large quantity of inconclusive results on the efficacy of KM [4–7]. On the other hand, case reports allow for many different outcomes, emerging from the detailed accounts of practitioners [8]. They could be the most informative accounts of the real practice of KM. Therefore, case reports are advocated in the early stage of clinical investigation of KM.

The Korea Institute of Oriental Medicine (KIOM) is the only

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government research institute on KM. Since 2005, the KIOM has conducted case report projects to promote building evidence on KM through active participation of local clinics. This study aims at critically reviewing the achievements, lessons and challenges of the 12-year project, and planning for future.

2. Methods

We searched projects using the KIOM's Integrated Research Management System (<http://rmd.kiom.re.kr>) to identify all the case report projects available at the KIOM. We added relevant projects missing from the database search but identified through interviews with researchers and final reports. When necessary, we interviewed the investigators of relevant projects with semi-structured questionnaires asking 'background, methods of identifying participating practitioners, and challenges'.

3. Results

Five principal investigators of the projects over four phases were interviewed. Overall, KIOM implemented eleven prospective and five retrospective studies, and one comparative controlled trial. Fig. 1 summarizes the phases of the projects, which were *initiation*, *development*, *cessation* and *resurrection*. During the **initiation** phase, a network of KM clinics, and database of Korean acupuncture therapy was established. **Development** phase set a web-based clinical case report system up with a focus on education. **Cessation** phase had one study conducted. **Resurrection** phase witnessed the recovery of study numbers at KM clinics. (Table 1).

The most significant findings are 1) sample sizes of the projects were small with median (n = 15); 2) the median duration of the observational period was 3 month.

3.1. Initiation (2005–2009): survey of Korean acupuncture therapy

KIOM surveyed Korean acupuncture therapy across the entire country resulting in 51 acupuncture therapies. The geographical region ranges from the border towns between China and North Korea to the South Korea. As a result, a DVD and database entitled “Korean Acupuncture Investigation Reports” was published [17]. To allow comparison of acupuncture therapies at different clinics, KIOM reported cases from 57 clinics from a network over 5 years.

3.2. Development (2010–2012); web-based clinical report system

Workshops (N = 13) facilitated case report writing in local clinics, and a web-based clinical report system (URL = <https://ammrc.kiom.re.kr>) was developed (Fig. 1, B). Specifically, condition-specific clinical observation forms and a CRF were developed for facial hot flush and dry eye syndrome. Despite the attempt for a retrospective chart review, the enthusiasm from the hospital was not viable due to lack of objective measure.

3.3. Cessation (2013–2015): Institutional Review Board (IRB) issues

IRB interpreted promoted case reports as clinical trials, hence imposed rigorous IRB approval (Fig. 1, B). This proved to be too heavy an administrative burden to handle.

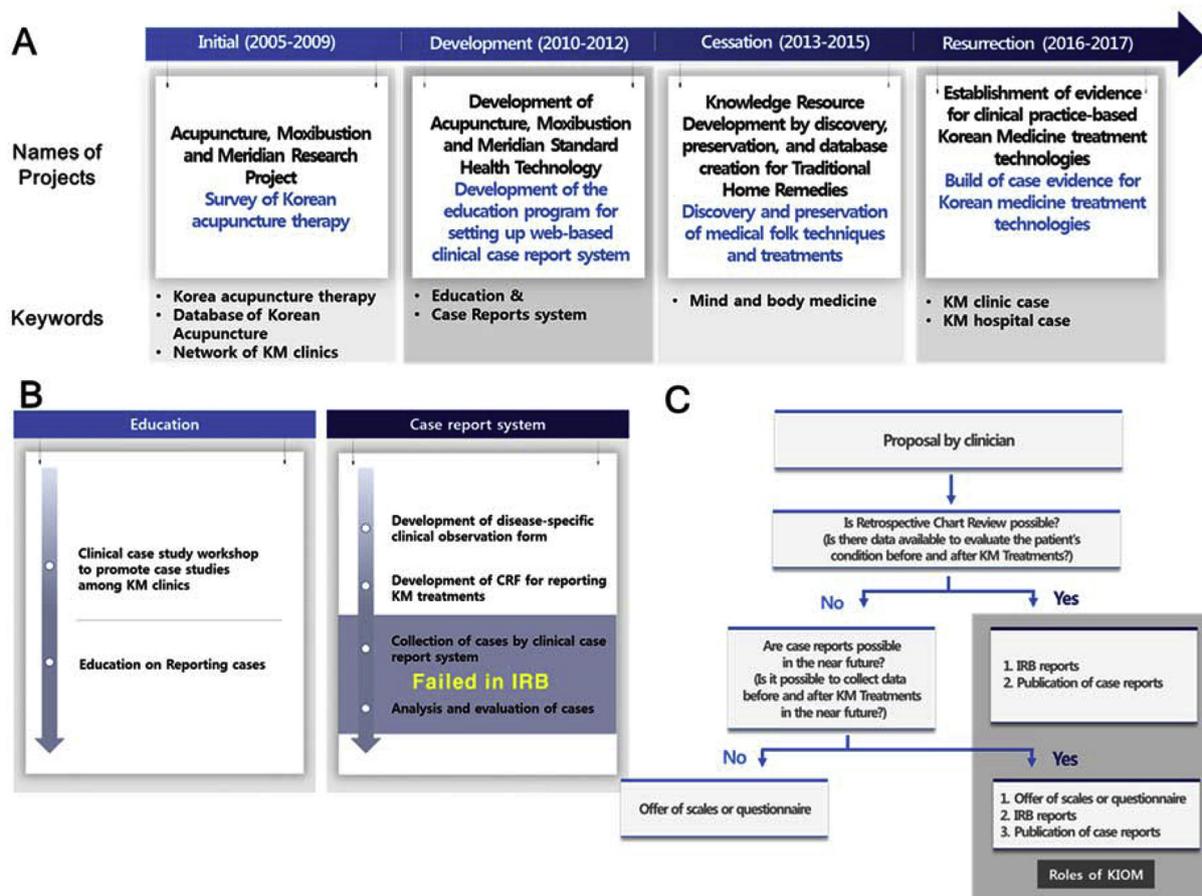


Fig. 1. Summary of Case report project history at KIOM from 2005 to 2017 (A) The names of project, keywords and yearly trials of case reports from 2005 to 2017 (B) Two tracks in the development stage (2010–2012) (C) Case report process in the “resurrection” stage, and roles of the Korea Institute of Oriental Medicine (KIOM). CRF; Case Report Form, IRB, Institutional Review Board; KM, Korean Medicine.

Table 1
Details of case reports projects at KIOM.

Stage	Year	Theme	Setting (Private Clinic: Public Health Center: Hospital)	Single or Multi-center (No. of centers)	Offer of CRF	Pro- or Retrospective	IRB Submission/IRB approval	Sample Size (n)	Intervention	Length of Observation (month)	First author
Initial	2006	Effectiveness of Hwang-gu acupuncture ^a treatment in hypertension patients; case report	Clinic	Single	Yes	Pro-	No/-	27	Acup	3	Han [9]
		The Antihypertensive Effect of Gyeok pal sang saeng yeok chim ^b Acupuncture Treatment in Hypertension Patients	Clinic	Multi (21)	Yes	Pro-	No/-	30	Acup	3	Han [10]
	2007	The Depressive Effect of Hwa-acupuncture ^c Treatment in Hypertension Patients	Clinic	Multi (9)	Yes	Pro-	No/-	14	Acup	4	Han [11]
		Gogoon acupuncture ^d for hypertension	Clinic	Multi (7)	Yes	Pro-	No/-	19	Acup	4.5	Han [12]
2008	The depressive effect of SNC nerve control ^e treatment in hypertension patients	Clinic	Multi (4)	Yes	Pro-	No/-	5	Acup	2	Han [13]	
		A clinical study on the case of Qigong therapeutics on chronic headache patient	Clinic	Single	Yes	Pro-	No/-	1	Qigong	1	Han [14]
	Antihypertensive effect of Meridian Tai Ji exercise treatment in hypertension patients	Clinic & Public health center	Multi (2)	Yes	Pro-	No/-	15	Qigong	1	Shin [15]	
	Treatment (Gyeok-Pal Sang-Saeng-Yeok-Chim) in Hypertension Patients; Control Study	Clinic & hospital	Multi (8)	Yes	Pro-	No/-	26	Acup	13	Han [16]	
2009	The effect of Acupuncture (Bun-Gu ^f) on dry eye syndrome	Hospital	Single	Yes	Pro-	No/-	32	Acup	2	UP*	
	Acupuncture for routine symptom management in hemodialysis patients	Hospital	Single	Yes	Pro-	No/-	24	Acup	7.5	UP*	
	Hemodialysis Patient Case reports (pruritus due to uremia, erectile insufficiency, Low back pain)	Hospital	Single	Yes	Pro-	No/-	3	Acup	7.5	UP*	
Development	2010	A case study on the effect of acupuncture treatment in patients with Amyotrophic lateral sclerosis with Dry eye syndrome	Hospital	Single	No	Retro-	No/-	15	Acup	6	UP*
		Clinical features and treatment response of facial flushing of menopausal and postmenopausal women using acupuncture-safe and effective proven facial flushing treatment technology	Clinic	Multi (Incomplete)	Yes	Pro-	Yes/No	0	Acup	0	IRB disapproval
Cessation	2015	Alternative treatments for obsessive-compulsive disorder: Two case reports featuring Korean medical modalities	Clinic	Single	Yes	Retro-	No/-	2	Meditation, Acup, herb	3	UP*
		Effects of <i>Scolopendrid</i> Pharmacopuncture for Ganglion	Clinic	Single	Yes	Retro-	Yes/Yes	22	Pharmaco-puncture	12	UP*
Resurrection	2017–2018	Effects of herb medicine for Mild cognitive disorder	Hospital	Multi (3)	Yes	Pro-	Yes/Yes	17	Herb	3	UP*
		Effects of <i>Carthmi-flos</i> Pharmacopuncture for Carpal tunnel syndrome	Clinic	Single	Yes	Retro-	In progress	In progress	Pharmaco-puncture	In progress	
		Effects of Korean Medicine for rehabilitation of rotator cuff tear	Hospital	Single	Yes	Retro-	In progress	In progress	Acup, herb	In progress	

*UP: Unpublished. Acup: Acupuncture.

- ^a Hwang-gu acupuncture: A system of acupuncture point selection method using the points distal below ankles and wrists to adjust flow of qi in eight extra meridians and twelve meridians.
- ^b Gyeok pal sang saeng yeok chim acupuncture: A system of acupuncture point selection method factoring in date information in the paradigm of Heaven-Earth-Human climate correspondence.
- ^c Hwa-acupuncture: A system of acupuncture point selection method using five element.
- ^d Gogoon acupuncture: Acupuncture technique using one of nine needles, three-edged needle, to release a few drops of blood.
- ^e SNC nerve control: Based on the notion that diseases can be caused by excitatory signals via blood vessels constriction and blood flow stagnation, this system of acupuncture point selection method uses the reflex point of corresponding spinal segment of either the right and left hand corresponding to the constitution of the patient.
- ^f Bun-Gu: Systems of acupuncture point selection methods using parts of body, auricle, scalp, foot, hand, etc. to address conditions of the whole body.

Table 2
Checklist for assessment of case report proposals for Korean Medicine.

Category	Contents	Weight	Score					Total
			5	4	3	2	1	
Clinical effects	Are there many cases with clinical effects?	2						
	Can we expect good results after verification with observational study?	3						
	Is the content of the proposal objective and reliable?	3						
Possibility of verification	Can it be verified with observational study-case reports?	3						
	Can it be verified using KIOM resources?	3						
Vision	Is the technique or medicine expected to contribute to an expansion of the medical service market?	2						
	Is there a possibility of advancing to an RCT in the future?	2						
	Is it possible to create a new medical industry other than the service market?	2						

KIOM, Korea Institute of Oriental Medicine; RCT, randomized controlled trial.

3.4. Resurrection (2016–2017): process for adoption of cases

Local KM clinics generated case reports unless radiological diagnosis was required. The process was as follows: (1) KMDs send proposals to KIOM describing candidate cases. (2) Researchers at KIOM rated using a checklist (Table 2). (3) If the score is above threshold (80) and objective results already available, KIOM submitted a case report protocol to the IRB. Without objective results, KIOM provided a guidebook and a CRF. For the cases with below threshold, KIOM provided scales or questionnaires for use (Fig. 1, C).

Current KM practice environment proves to affect this level of evidence developing efforts. Policy regarding the KMD's utilization of measuring device limits objective documentation of cases. Perhaps coupled with the complexity of combinatory interventions in real world practice, education on case reports did not motivate clinicians to complete the CRFs, although holders of unique techniques being recognized.

4. Discussion

This is a reflective summary report of multiple projects over 12 year focused on developing grass root evidence rather than judging evidence. Our findings are it is crucial to have 1) a nurturing environment for participating clinicians where they are motivated enough and given appropriate tools to diagnose cases and measure outcomes objectively to build evidence base; 2) a streamlined procedural platform without IRB delaying. A few practical points are the importance of motivated clinicians, and the use of patient centered self-assessment tools.

The targeted disease were difficult to be cured in conventional medicine, sample size were small due to low prevalence. Especially, the prevalence of facial flush and dry eye syndrome turned out to be much lower than anticipated. Even though hypertension were relatively high prevalence, patients with hypertension tend to go western medical clinic rather than KM clinic. In the future study, typical patients coming to local KM clinics should be considered. For small clinics, it is difficult to increase compliance and observation period, for the patients have no benefit to participate in study. It made observation period shorter.

While further expansion of use of assessment tools by KMDs is on its way, the use of a self-reported outcome measure for CAM in “real-world” clinical settings may shed some lights on KM's outcome assessment [18,19]. It is desirable to consider an online database of case reports as a tool for practice-based research, and to learn from collaborative networks as a prospective patient-centered data collection program by Oregon College of Oriental Medicine [20], and Patients Receiving Integrative Medicine Effectiveness Registry of the BraveNet practice-based research network [21].

KIOM has plans to facilitate case reports. First, a standing case program like the US National Cancer Institute Best Case Series Program [22]. This would stop much of a potential delay in time and procedure by having KIOM staff policing the case report process, hence lower threshold for clinicians to initiate and complete the whole process.

Second, an online platform for sharing cases among clinicians. Existing online communities does not validate the quality of cases. The new platform aspires to facilitate sharing of quality cases with objective outcomes. Finally, free distribution of 100 questionnaires to assess outcomes, with which clinicians evaluate the outcomes of their treatments.

In summary, nurturing an environment for clinicians where they are motivated enough and providing appropriate tools to diagnose cases and measure outcomes is crucial to build evidence base. The lessons from the past 12 years at KIOM may guide the future endeavor to facilitate grassroots evidence of KM.

Declarations of conflict of interest

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ctcp.2019.01.007>.

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